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UNIT ORGANIZATION OF THREE TOPICS IN BUSINESS PRACTICES FOR SEVENTH GRADE PUPILS

Service Paper

Submitted by

Gardner Weeks Handy

(B.L.I., Emerson College, 1932)

In partial fulfillment of requirements for

the degree of Master of Education

1947

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CHAPTER I

THE PROBLEM

Statement of the problem. The seventh-grade course of study in arithmetic at the Winchester Junior High School provides approximately six weeks' study in business practices. It is the problem here to organize and present units and unit assignments[1] covering the topics discount, profit and loss, and interest, and to apply the basic principles and procedures identified with the unit method.[2]

The schedule. There are four forty-minute periods of arithmetic instruction a week, two study periods each week devoted exclusively to arithmetic, as well as assigned homework twice a week. During the study periods pupils regularly complete assigned lessons in the presence of a teacher whose responsibility lies solely in seeing that the work is done. These study periods are not arranged systematically with the result that several divisions cannot work out assignments previously explained in the laboratory period. Assignments, therefore, are usually in the nature of review work. Theoretically, homework is planned to consume from thirty to forty minutes

1/ Roy O. Billett, Fundamentals of Secondary-School Teaching, Houghton Mifflin Company, of Boston, Massachusetts. 1940, p. 506.

2/ As developed in Fundamentals of Secondary-School Teaching and in the course in the Unit Method at Boston University.

of the pupils' time. One after-school period a week is provided for pupils needing further help in arithmetic although pupils are invited to appear whenever there is need. A thirty-minute work period follows the fifth period each day. At this time pupils may get individual instruction in work causing difficulties or in assignments missed by absences.

The classroom and equipment. The laboratory classroom is the conventional type. It is well lighted and cheerful in appearance. Ample blackboard space is provided at the front and along one full side of the room. The back wall holds a serviceable bulletin board. There are shelves for books in one corner at the front and a three-drawer filing cabinet between the teacher's desk and a library table. There are eight pupils' desks in each of five rows - all anchored to the floor.

No provisions have yet been made for showing films in this room. There are, however, two sound projectors and a screen available to the staff, and an exchange of rooms for this purpose is possible.

The pupils to be taught. There are one hundred ninety-seven pupils in the seventh grade, heterogeneously grouped. Division membership runs between thirty-one and thirty-four. Ages range from eleven to thirteen years. The accumulative records give no intelligence quotients for many of the pupils, but from records available and an appraisal of their work it is probable that the range is between eighty and one hundred fifteen. Stanford Arithmetic Achievement Tests given at the

beginning of the school year show a median grade equivalent of 6.6 for reasoning and 5.8 for computation. A questionnaire revealed that nearly fifty per cent of the paternal parents of the pupils are engaged in some type of business vocation. All but two pupils have, at some time, earned money. Over twelve per cent have earned money by associating themselves with business either by selling (chiefly newspapers) or by working in stores.

Since the beginning of the school year the pupils have reviewed fundamentals of whole numbers, fractions and decimals, have acquired an introductory knowledge of graphs and have used percentage as it applies to case I.

Methods employed. The preceding information is disappointing as it relates to low abilities in arithmetic computation on the part of many in the seventh-grade class. These pupils will need close supervision and instruction. Progress tests have been devised which will be used to measure minimum achievement at the completion of each short unit. They represent typical problems and exercises which the pupils will solve in the core activities.[1/] Whenever a pupil fails to complete at least seven out of ten items correctly his failure will be analyzed and he will be given further instruction until it is evident he understands the processes.

1/ Op. Cit., p. 507.

Since the pupils in all divisions are grouped heterogeneously the unit method will allow pupils to proceed at a rate commensurate with their abilities. Work periods and regular after-school help will be used to give added assistance wherever needed.

Three textbooks are employed with the majority of problems and exercises found in the one test available to the pupils at all times. The one restriction - that of requiring the use of the two texts, having only thirty-five copies each, during the laboratory period - must be made so that all pupils may have equal opportunity to use them.

Pupils' scores on the Stanford Achievement Test Form E given to the seventh grade early in the school year will be used as a basis for comparing average arithmetic placement of each pupil in the entire range with the placement obtained from scores on the business practicefinal achievement test.

The ninety-five items in the achievement test were prepared in three groups, the first thirty-six representing concepts derived from understandings and procedures in solving related problems. The second group of thirty-four are typical of exercises which pupils worked in the core activities. In the third group of twenty-four problems less formality and more real life application has been attempted.

In giving a test of this nature the teacher has in mind that the pupil is being measured not only for his understanding of procedures but for his level of accuracy as well as his

knowledge of the fundamental arithmetical principles and skills. In general seventh and eighth-grade pupils are weak in the latter[1] and this grade is no exception.

The pamphlet. The purpose of the pamphlet which follows is to supplement the arithmetic texts which are weak in developing understandings and appreciations related to certain business practices included in this unit. The writer knows of no text on the subject which pupils of the seventh-grade level may readily comprehend. It is intended that the study guide shall include questions and problems which will augment the use of this pamphlet as a reference.

1/ Harry A. Greene and others, Measurement and Evaluation in the Secondary School, Longmans, Green and Company, New York, New York. 1946, p. 389.

SOME EVERYDAY BUSINESS PRACTICES

Topic I

SELLING AT A BARGAIN

Jason Henry opened a hardware business in a small town. His son George, who was a seventh grader in junior high School, came in to help him every afternoon and on Saturdays as well. George liked math. He took pride in the accuracy of his work. His father allowed him to wait on customers because he could trust him to add his columns correctly and make change quickly and carefully.

One fall day Mr. Henry called his son from the storage room. "George," he said, "we are going to have a sale."

"Are we going to have a big sign in the window reading 'Bargain Prices' as Mr. Snyder has in his clothing store?"

"Yes, we shall have a sign, but we might think of other things to print on it such as mark-down, sale, per cent off, reduced prices, savings, less-than-cost, or fraction of original price. All these things refer to 'discount' which is a manner of selling things at less than what a customer would regularly pay for them."

George was silent for a moment. "But, Pop," he asked again, "why should we sell things for less money. Is the other hardware store in town getting more business than we?"

"Not exactly, son, but it is good business practice to have a sale occasionally. In the first place our business is a fairly new one here. People are used to trading in the

other hardware store. Although this community is large enough to support two hardware stores we should hold a sale as one method of attracting customers. People save money when they buy things they need at reduced prices, and when they come here to buy they get acquainted with many of the things we have for sale at regular prices."

"Then we shall not sell everything at less than the ordinary selling price?"

"No, that will not be necessary. We can sell merchandise that is out of season, such as our summer's supply of garden hose. Some of our ash cans were shipped to us slightly damaged so we can sell those at a reduced price. We have an oversupply of some goods such as that enamel ware which we can sell at a discount. Some of our linoleum designs are no longer being made; by selling those pieces for less we can raise money quickly to buy up-to-date patterns."

"Do all stores offer things for sale at a discount?" George asked.

"Most stores do and other businesses, too," answered his father. "You remember when you paid your mother's gas bill for her she received a discount. The bill was $3.80; because she paid it promptly the gas company gave her a five per cent discount making the charge $3.61. Our electric company does the same thing, so does Mr. Ebony our coal dealer."

George stifled his curiosity long enough to wait on a customer, then he returned to his father for more information.

"How can we let people know we are having a sale?" he asked.

"In the very same way that your mother is informed of a bargain in dresses in the city stores. We have a good local paper in which we may advertise, we may use our display windows for that purpose, too, and it might pay us - if we lived in a large community - to advertise by radio."

At this moment George thought he had a bright idea.

"Why couldn't we raise the regular price of all our things, then offer them to people at a discount. They would think they were getting a bargain and fall for it."

Mr. Henry scowled. Then he looked at his son with a twinkle in his eye.

"George," he said, "This is one time I caught you without your thinking cap. Suppose Mr. Jones comes in to buy a lawnmower of a certain make marked $12 with a discount of $2. After he has taken it home and used it he sees the same make lawnmower in another store selling for the regular price of $10. He would know immediately that we did not give him a true discount. Do you think he would trade with us again?"

"No," answered George sheepishly.

"Furthermore, "Mr. Henry went on, "It suggests dishonesty, perhaps only slightly, but it is dishonest! News travels, and we should most likely lose the good will of

other customers. It is well to keep in mind that America is the only large country left which still supports free enterprise. That is, our government, except in emergencies like war, does not tell us how to run our affairs. We wish to keep it that way because it is one of the freedoms of democracy that makes our lives happier. The best way to stay free is to show everyone that business has a two way purpose: to benefit the customer as well as itself."

Topic II

MAKING AND LOSING MONEY

George and his father were working in the store window removing banners, signs and merchandise used in advertising their recent sale.

"Boy!" said George, "That was some workout! Did you ever see so many people in the store at one time? I'll bet we sold five thousand dollars worth."

Mr. Henry laughed.

"That's an exaggeration, Son. But we did very well, at that. From now on I expect to see some of those people as regular customers."

"Why not have a sale every week, Pop? With so many people buying we could make lots of money."

"I am afraid not, George. Not only would a frequent sale take too much effort, but the margin of profit would be too slim. A merchant sells goods to make money. Sometimes he loses, but he must sell his goods regularly at a high enough price to pay the expenses of running the business and make a fair profit as well."

"What do you mean by margin of profit?" George asked.

"Margin or gross profit is the difference between what merchandise costs the storekeeper delivered from the factory or distributor and what he sells it for to his

customers. For instance, those ice skates cost me $3.00 at the factory. If I sell them for $4.75, I make a gross profit of $1.75, and a net profit of about 55¢.

"Is the net profit the amount you earn for yourself?"

"Yes. The net profit is that part of the margin which I have left after I have paid the Overhead or operating expenses of running the business. Can you tell me what some of our expenses are?"

George thought a minute and then suggested, "We pay Mr. Peters rent for the building. Then there are wages for you as manager, Miss Phillips as bookkeeper, and myself as helper. Lights and telephone cost money. In winter we pay the oil man for fuel. Are there any other items, Pop?"

"Quite a few, George. Freight or express charges on all shipments to us are part of the cost of merchandise, but there are overhead expenses such as insurance, advertising and taxes. You may think of more."

One other matter bothered George.

"How do you decide how much you should sell merchandise for so you can pay expenses and make a profit?"

"Well," Mr. Henry answered, "Some goods sell at standard prices. That is, all merchants ask the same amount for them, so the storekeeper who can keep his overhead low makes more money than the merchant whose expenses are high. On all other items I figure that right now an

average of 40% of the cost should be paid for overhead and I should make a net profit of 10% on fast selling goods and nearer 20% on seasonal and slower selling merchandise. Those grass rakes, for example, cost me $1.80. To that I add 40% or 72¢ as overhead and 15% or 27¢ as net profit. You can figure the selling price yourself."

"If we want to make a lot of money, Pop, we can't charge more for our things because people will buy at places where they can get things less expensively, isn't that right?"

"Exactly. A successful business man makes more money by keeping the good will of his customers, lowering his operating expenses as much as possible, selling out at discount prices where he can, and keeping his store well stocked with goods that people will buy. Sometimes he makes a mistake and offers items for sale which few people seem to want. In that case he must take a loss. I bought some grass clippers at $1.50; they didn't seem to sell. In order to get rid of them I sold them for $1.69. My overhead was 60¢. You can see how much I lost on twelve of them."

George summed up what he had learned this way:

> If we sell goods at <u>more</u> than the <u>cost</u> plus the <u>overhead</u>, we make a profit. If the selling price is <u>less</u> than the <u>cost</u> plus the <u>overhead</u>, we take a loss.

Topic III

WE MUST PAY FOR THE USE OF MONEY

George was bending over his school work at the dining room table where he usually studied after the dinner dishes had been cleared away.

"Say, Pop," he said, "our teacher said that we should begin our study of INTEREST next week. What's that all about?"

Mr. Henry patiently put down his evening paper.

"Well, George, I suppose we might say that 'interest' is concerned with borrowing money. Most everyone, sometime in his life, borrows money. A many may need money with which to buy a house, a car or a boat; he may want to open a business or make repairs on his house, perhaps he wishes to secure money to educate his children or to pay up his debts. A business concern may need to have money to expand, a town might need to borrow money to build a school, library or hospital. A state might borrow money to build highways, and our national government would borrow money to construct dams, to erect bridges, to promote slum clearance or to finance a war."

"Where do they get the money," George interrupted, "and how do they pay it back?"

"That's a big question," Mr. Henry replied, " but we

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"That's a big question," Mr. Henry replied, "but we

might say simply that a person or small business would borrow it from a bank. If a very large business needed money, such as the telephone company, it would probably sell stocks. A city, state or national government would, similarly, issue bonds. In buying your war bonds you were lending money to your government; it was borrowing money from you.

"As for paying it back, a person would pay back borrowed money out of his salary, a business out of its profits, the city, state, and national government from the taxes collected each year."

"Does it cost anything to borrow money?" George asked.

"Certainly," his father replied. "That is where the term 'interest' comes in. People who do not own the houses in which they live pay rent because they are really borrowing the houses. In just such a way people who borrow money from a bank pay for the use of it. This is called interest.

"How much does it cost to borrow money?"

"Let's put the answer this way, Son. Suppose a friend of yours told you that he would pay you interest if you would lend him a dollar. If you were quite certain of getting your dollar back you might say, 'Surely, if when you return it tomorrow you give me two cents.' But if you thought he might not pay back what he owed you, or if you

knew it would be a long time before he returned your dollar, you might charge him twenty cents interest. A fair rate of interest - or cost of borrowing money - depends greatly upon the risk the bank must take when it lends the money as well as the length of time the money is lent. Towns, states and federal government may borrow money for as little as one-half cent for each dollar borrowed, but a business which is not very sound may have to pay fifteen or twenty cents."

"Where does a bank get the money it lends?" George wanted to know.

"You have $500 in your savings account at the bank, George. The bank pays you 2¢ for every dollar each year, roughly speaking. That amounts to $10. Now if the bank takes your $500, lends it to someone and charges 4¢ for each dollar, the bank gets $20 and makes a gross profit of $10. Of course, there are many thousands of dollars in a bank put there by depositors. That is the money a person uses who borrows from the bank."

"How does a person go about getting money from the bank?"

"I am planning to renovate my store to make it more attractive and servicable. I intend to improve the lighting, place linoleum on the wooden floor, build modern display counters and have the store repainted. You see,

my boy, all that costs money. I have not been in business long enough to have saved money to do it, yet I shall make more money if I have a better looking store. It is estimated that it will cost me $2400 to do the complete job.

"Let us say that I go to the bank and ask for the loan of $2400 for two years. The banker decides I am a fairly good risk and quotes a rate of 4 per cent (4%). That means I can borrow the $2400, which we call the PRINCIPAL for a term of two years, which we call the TIME, for the RATE OF INTEREST which is 4%. Common rates of interest vary from 1% to 6%, and as you already know from your study of 'per cent' 4% would mean 4¢ for every dollar I borrow, <u>except</u> that in borrowing money the rate is always figured on a basis of <u>one year</u>."

George interrupted again. "You would then have to pay twice as much interest for two years."

"Yes." said his father. "If I borrowed the money for only six months the interest would be half as much. The INTEREST on $2400 at a 4% rate for one year would be $96, or $192 for two years."

"When you pay the interest do you return the money you borrowed?"

"It may be that the bank will require that I pay part of the interest every half-year or six months. If I choose, I may return some of the principal at the same time. But

at the end of two years I must return all the money I borrowed plus any interest I owe. This sum or total is called the AMOUNT."

"Gee, Pop, thanks a lot. I guess I'll get a head start over the other fellows on this subject."

"There's a lot more to it, Son, but if you let that much sink in you will find your work in 'interest' that much easier. Remember, though, borrowing money is a serious business. It has ruined many a person who has asked for a loan without thinking whether or not he could pay it back! On the other hand, it has put many a hard working, honest person on his feet. Borrowing and lending money on a business basis is a sound part of our democratic way of life. We must do it intelligently and fairly."

CHAPTER II

ORGANIZING THE FIRST UNIT AND UNIT ASSIGNMENT

General Statement of the Units[1]

The success of free enterprise as a democratic policy depends largely upon prudent and honest uses of money by consumer and tradesman in everyday business.

Discount, profit and loss, and interest involve problems related to our capitalistic economy with which every citizen, at one time or another, directly concerns himself.

Marking down the retail price of goods by an operation known as discount encourages the consumer to save money and the storekeeper to accelerate his business. A merchant is in business to make money, but at times he may suffer losses. His profit or loss emphasizes the operations lying between the actual buying and selling of goods. All consumers and merchants face the problems of borrowing money, and interest represents the method by which the payment for this service is determined.

Delimitation of the Unit[2]

Money may be saved by purchasing goods at a discount.

Storekeepers offer a discount to attract customers, to sell goods that are out of season, slightly damaged or

1/See Fundamentals of Secondary-School Teaching, p. 505. This general statement refers to all three units.
2/Ibid.

shopworn, to use up an oversupply of goods, or to raise money quickly.

Public utilities often offer discounts on monthly bills to encourage prompt consumer payment.

Merchants advertise sales in newspapers informing prospective customers of the products being sold and the savings which may be expected.

Sometimes consumers are offered goods at a discount by a questionable practice of leading them to believe they are acquiring merchandise at wholesale prices. Comparison of the net prices with those of reliable firms selling identical goods by regular retail methods will show the consumer whether or not he is getting a true discount.

Some other terms for discount are "mark-down", "sale", "per cent off", "savings", "less than cost", "fraction of original price".

The usual amount of money a merchant asks for the goods he sells is said to be the "regular price", or "marked price".

If a merchant wishes to offer any number of his goods below the regular selling price, he subtracts a certain sum known as the discount, from the regular price. This is usually determined by a stated per cent, fraction, or nominal amount such as "10% off", "1/2 off", "$2.00 less".

The percent used to decide how much shall be taken from the marked price is called the "rate of discount".

The new or discounted price is known as the net price.

The discount is found by multiplying the marked price by the rate of discount in decimal form.

EXAMPLE: John bought a football at a sporting goods sale. It was marked, "5.75 - 15% off." How much was the discount?

Solution: $5.75 (marked price) X .15 (rate of discount) = $.8625 or $.86 (discount)

Note: In discount, any fractional remainder is dropped without changing the first two decimal places.

Very often discounts are advertised as 1/2, 1/4 off. Fractional reductions are computed on the same basis as percentage discounts.

The net price is determined by subtracting the discount from the marked price.

EXAMPLE: What did John pay for the football?

Solution:

$5.75	(marked price)
-.86	(discount)
$4.89	(net price)

In case only the net price is wanted it may be found by the more direct method of subtracting the rate of discount from 100% and multiplying the marked price by the difference expressed as a decimal.

EXAMPLE: In the above problem $5.75, the marked price, is multiplied by the difference of 100% - 15% which is 85%.

Solution: $5.75 X .85 = $4.8875 or $4.89 (net price)

Note: When this method is used the fractional remainder changes the second decimal place to the next cent.

Probable Indirect and Incidental Learning Products[1]

1. To be able to apply a knowledge of case I per cent.

2. To improve accuracy in steps involving subtraction and multiplication.

3. To be able to use fractional equivalents in computing discount.

4. A realization that discount is an important and widely used practice in everyday business.

5. An understanding of terms used by our merchants in advertising sales.

6. An appreciation of the value of true discounts to consumers.

7. An appreciation of the need of discount in helping a tradesman to move his stock, attract new customers and raise money quickly.

8. An intelligent outlook upon a business practice common to our capitalistic economy.

9. An attitude of thrift in saving money through the consumer use of discount.

1/ Op. Cit., p. 506.

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The Unit Assignment

A. Introductory Activities

Time Allotment: Two weeks of four forty-minute directed activity periods and two undirected study periods.

Code: SU - Social Utilities Arithmetic Text

MSM - Modern School Mathematics Arithmetic Text

AP - Advanced Problems in Arithmetic Text

SG - Included in the study guide

HW - Suggested for home study

PH - Pamphlet

Introduce this unit by showing the color film "Bill Gorman - Twelve Year Old Business Man." Follow the film showing with a teacher-pupil discussion endeavoring to emphasize the following points:

1. Business practices involve the earning, saving, and spending of money.

2. As shown by the film-story money may be saved when we purchase things for less than their ordinary cost. We may call this saving a discount.

3. In business money is earned principally by selling goods for more than their total cost.

4. Money needed for such purposes as starting a business must either be taken from money saved or money borrowed.

5. A successful business man must keep accurate records of his finances, understand business practices and compute figures skillfully.

Inform the class that the general theme of these units will involve discount, profit and loss, and interest. Invite statements regarding the reasons for knowing about these topics and let pupils declare what they feel should be important goals in completing the unit.

Arrange the bulletin board the day previous to the introduction of this topic as follows:

At the center of the bulletin board have a large poster listing five reasons why merchants offer discounts. Surround this with clippings from newspapers advertising "sales" of various merchandise. Include a few bills from a gas company and a coal dealer offering prompt payment discounts. Allow for the removal of some of the display from time to time to make room for illustrations contributed by pupils.

Conduct a teacher-lead discussion of discount buying. Using the principal that money is saved for the consumer by buying goods at a discount show that the merchant also has important reasons for wishing to sell his goods at reduced prices. Call attention to the bulletin and urge class members to contribute to its general theme.

6. A successful business man must keep accurate records of his finances, understand business practices and compute figures skillfully.

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Conduct a teacher-led discussion of discount buying. Bring the principal that money is saved for the consumer by buying goods at a discount down that the merchant also has important reasons for wanting to sell his goods at reduced prices. Call attention to the bulletin and urge class members to contribute to its general theme.

Use a simple story to illustrate the need of consumers recognizing a true discount.

As part of the introductory discussion use and explain the terms "regular" or "marked price", "discount", "rate of discount", and "net price".

Give a blackboard explanation of the method of finding discounts. Emphasize that the discount is actually the customer savings.

B. Core Activities

(SG) (HW) List as many terms as you can which storekeepers use for discount such as "sale" and "mark-down". Ask your friends or parents to help you extend your list.

(SG) Use each of the following terms in sentences showing you understand their meanings. "marked price", "discount", "rate of discount", "net price". (MSM, P. 144)

(SG) At a sporting goods store the following items went on sale. Find the savings on each one.

ITEM	REGULAR PRICE	RATE OF DISCOUNT
A sweater	$10	20%
A football	$5.75	1/4 off
Ice Skates	$7.95	15%
A bicycle	$45	25%
A basketball	$4.65	1/3 off

Football shoes	$6.75	10%
A hockey stick	$3.85	30%
Shinguards	$4.69	18%
A rifle	$12.50	20%
A tennis racket	$8.79	12-1/2%
A sled	$7.50	1/2 off

(SG) If you wish you may compute some of the savings advertised in the bulletin board display.

Use the blackboard to teach the method of finding net price. Stress the process of deducting the discount from the marked price and dropping any remaining fraction of the discount.

(SG) You will need practice in computing discount and finding the net price. Remember to deduct the discount from the original price. (SU, P. 180, 1 to 15 and MSM, p. 145, problems 1 to 4.)

Discuss common mistakes found in problems submitted by pupils. Ask some students to work out exercises at the board.

(SG) You will find another method of finding net price discussed in your Social Utilities text. If you wish you may use this process. Compute any twenty of the problems on page 181 and any thirty of the exercises between numbers 22 and 63 on page 182.

Football shoes	$6.75	10%
A hockey stick	$3.98	30%
Sunglasses	$4.50	15%
A kilt	$12.00	20%
A tennis racket	$3.75	12-1/2%
A sled	$7.50	1/3 off

(29) If you wish you may compute some of the savings advertised in the bulletin board display.

Use the blackboard to teach the method of finding net price. Stress the process of deducting the discount from the marked price and dropping any remaining fraction of the discount.

(30) You will need practice in computing discount and finding the net price. Remember to deduct the discount from the original price. (See, p. 180, 1 to 15 and MSM, p. 146, problems 1 to 4.)

Discuss common mistakes found in problems submitted by pupils. Ask some students to work out exercises at the board.

(31) You will find another method of finding net price discussed in your Social Utilities text. If you wish you may use this process. Compare any brevity of the principle on page 181 and any clarity of the exercises between numbers 28 and 33 on page 182.

(SG) (PH) Read the story "Selling at a Bargain". Answer the following questions in complete sentences.

1. Why do merchants have sales? Give at least five reasons.

2. What other businesses besides stores offer discounts?

3. Does the gas company in our community offer discounts? Why?

4. State several ways in which "sales" may be advertised.

5. Why was George's suggestion to raise the regular selling price on all the goods and sell them at false discounts a poor one?

6. What should be a two-way purpose of business? Give a good reason for your answer.

Explain the procedure of several typical problems related to discount. Work them at the board with students contributing to their solution.

(SG) The following problems found in the Advanced Problems in Arithmetic text are easy to do, but you may try any of the others if you wish. (AT, p. 51, 1, 2. p. 52, 3, 9, 10, 13, 15, 17, 19, 20, 22, 31, 42.)

C. Optional Related Activities

Make a collection of clippings advertising sales and discounts. Trim them very carefully. Paste them on plain

(30) (PH) Read the story "Selling at a Bargain".

Answer the following questions in complete sentences.

1. Why do merchants have sales? Give at least five reasons.

2. What other businesses besides stores offer discounts?

3. Does the gas company in our community offer discounts? Why?

4. Name several ways in which "sales" may be advertised.

5. Why was George's suggestion to raise the regular selling price on all the goods and sell them at false discounts a poor one?

6. What should be a two-way purpose of business? Give a good reason for your answer.

Explain the procedure of several typical problems related to discount. Work them at the board with students contributing to their solution.

(30) The following problems found in the Advanced Problems in Arithmetic text are easy to do, but you may try any of the others if you wish. (AP, p. 81, 1, 2, p. 82, 8, 9, 10, 13, 15, 17, 18, 20, 22, 31, 42.)

C. Optional Related Activities

Make a collection of clippings advertising sales and discounts. Trim them very carefully. Paste them on plain

white notebook paper and build a scrapbook. Bring a good one to class for the bulletin board.

Draw pictures or cartoons to illustrate any of the reasons why merchants hold sales.

Mrs. Jones received a 5% discount for paying her monthly gas bills promptly. Make a chart or graph showing the savings of each month and her total savings for the year. Her regular bills were as follows: Jan. $2.78, Feb. $2.80, Mar. $2.98, Apr. $3.10, May $3.24, June $3.89, July $4.20, Aug. $4.65, Sept. $3.95, Oct. $3.41, Nov. $2.96, Dec. $2.85. You may draw a bar or line graph. In either case you should use two bars or two lines which will show the regular charge and the net price.

If your family has kept the gas bills over a period of a year perhaps you would like to draw a two-line or two-bar graph showing the regular charge as compared to the net price after discount.

Draw a poster which could be used in a store window to advertise the sale of certain merchandise. Have the regular price, discount and net price showing. If you wish suggestions for ideas perhaps your art teacher will assist you.

white notebook paper and build a scrapbook. Bring a good one to class for the bulletin board.

Draw pictures or cartoons to illustrate any of the reasons why merchants hold sales.

Mrs. Jones receives a 3% discount for paying her monthly gas bills promptly. Make a chart or graph showing the savings of each month and her total savings for the year. Her regular bills were as follows: Jan. $2.75, Feb. $2.10, Mar. $2.50, Apr. $2.10, May $2.25, June $2.30, July $2.35, Aug. $2.40, Sept. $2.30, Oct. $2.40, Nov. $2.30, Dec. $2.30. You may draw a bar or line graph. In either case you should use two bars or two lines which will show the regular charge and the net price.

If your family has kept the gas bills over a period of a year perhaps you would like to draw a two-line or two-bar graph showing the regular charge as compared to the net price after discount.

Draw a poster which could be used in a store window to advertise the sale of certain merchandise. Have the regular price, discount and net price showing. If you wish suggestions for ideas perhaps your art teacher will assist you.

Study the method of comparing discounts. Solve several problems of this type correctly. Hand the work in neatly done on plain white paper. (SU p. 183.)

Trade discount differs very little from the discount offered by a retail merchant. Find out what you can about this and complete five or six problems related to trade discount. Use plain white paper. Be neat and accurate. (SU, pp. 185 and 186.)

Learn how an automatic bargain basement like Filene's operates. You might visit Filene's and make inquiries or you might write a letter to the manager in charge asking for information. Report your findings to the class and give examples.

Does our school department get discounts on any school supplies or athletic equipment it purchases? Find out about this from your coach or school principal. What are the rates of discount? Do they have anything to do with the amount of supplies bought? Write your findings on paper and give examples.

The Arlington Gas Light Company offers a prompt payment discount on monthly bills. Find out why this is done. You will probably wish to ask the manager of the local office about this. Be sure he understands why you want this

Study the method of computing discounts. Solve several problems of this type correctly. Hand the work in neatly done on plain white paper. (SU p. 183.)

Trade discount differs very little from the discount offered by a retail merchant. Find one ware you can shop this and complete five or six problems related to trade discount. Use plain white paper. Be neat and accurate. (SU, pp. 185 and 186)

Learn how an autocratic bargain basement like Filene's operates. You might visit Filene's and make inquiries or you might write a letter to the manager in charge asking for information. Before your findings to the class and give examples.

Does our school department get discounts on any school supplies or athletic equipment it purchases? Find out about this from your coach or school principal. What are the rates of discount? Do they have anything to do with the amount of supplies bought? Write your findings on paper and give examples.

The Arlington Gas Light Company offers a prompt payment discount on monthly bills. Find out why this is done. You will probably wish to ask the manager of the local office about this. Be sure he understands why you want this

information.

Have you a friend or relative associated with the retail trade? Ask him or her how "sales" are planned and carried out; whether or not a sale means profits or losses for merchants. If you can learn anything further about discount from your interview in addition to what you have learned in class include it in your written report.

Use the following questions as a basis for a short paper or a two minute talk before the class:

Why are mark-down sales good practices in business?

If a merchant gets a trade discount should he offer discount on the same merchandise in turn to his customers?

Think of several items which might go on sale during certain seasons of the year. What reasons can you give for this?

What harm is done to free enterprise in this country when merchants advertise false discounts or offer goods for sale at supposedly "wholesale" prices?

D. Evaluative Activities[1/]

When a pupil has completed the core activities have him take the following progress test. If he completes seven out of the ten items correctly allow him to select

1/ Op. cit. See tests, p. 508 and Chapter XX

an optional activity if he so chooses. Should he fail to complete seven test items correctly analyze his difficulty and offer further assistance until it is evident he has overcome his difficulty.

PROGRESS TEST - UNIT I

Find the answers to the following exercises and problems. Place the answers in the brackets to the right after you have checked your work carefully.

Compute the net price on the following:

	Regular Price	Rate of Discount	Net Price
1.	$250	30%	( )
2.	75	25%	( )
3.	.70	15%	( )
4.	1.50	10%	( )
5.	.50	20%	( )

6. For how much would a chair sell marked $20 and discounted 10%. ( )

7. Find the net price of a $35 coat sold at 1/3 off. ( )

8. What would you save on a tennis racket marked down 20% if it regularly sold for $3.50? ( )

9. John's bicycle cost him $42. When he no longer needed it he sold it for 1/4 less. What was the price he asked? ( )

10. If footballs are selling at a 12-1/2% reduction, what

an optional activity if he so chooses. Should he fail to complete seven test items correctly analyze his difficulty and offer further assistance until it is evident he has overcome his difficulty.

PROGRESS TEST - UNIT I

Find the answers to the following exercises and problems. Place the answers in the brackets to the right after you have checked your work carefully.

Complete the net price on the following:

Regular Price	Rate of Discount	Net Price
1. $250	20%	( )
2. 75	25%	( )
3. .70	15%	( )
4. 1.80	10%	( )
5. .30	20%	( )

6. For how much would a chair sell marked $80 and discounted 10%. ( )

7. Find the net price of a $30 book sold at 1/3 off. ( )

8. What would you save on a tennis racket marked down 20% if it regularly sold for $25.00? ( )

9. John's bicycle coat him $65. When he no longer needed it he sold it for 1/4 less. What was the price he asked? ( )

10. If footballs are selling at a 12-1/2% reduction, what

would an $8.75 football cost you? ( )

E. References for Pupils' Use

Strayer, George D. and Clifford B. Upton, Social Utility Arithmetics, American Book Company, 1944.

Schorling, Raleigh and others, Modern School Mathematics, Book One, World Book Company, 1935.

Gilmartin, John G. and Claude C. Russell, Advanced Problems in Arithmetic, Newson and Company, 1930.

(See also Topic I of the pamphlet, page 7 of this chapter)

CHAPTER III

ORGANIZING THE SECOND UNIT AND UNIT ASSIGNMENT

General Statement of the Unit

The general statement of this unit is included in the statement of the first unit, Chapter I.

Delimitation of the Unit

A merchant sells goods to make money. If he sells his merchandise for more than it costs him, he makes a profit. If he must sell for less than it costs he loses money or takes a loss.

In buying, a merchant pays a sum of money known as the cost of the goods. Shipping charges from the factory or wholesaler are included in the cost.

He must also pay for operating his store which is part of the cost of merchandise and is known as the overhead or operating expenses. Overhead includes such expenses as salaries, rent, taxes, light, heat telephone, express or freight to customers, insurance, repairs, remodeling, breakage, spoilage, soilage of goods, and advertising.

What the business man asks his customers for his merchandise is called the selling price.

The difference between the cost and the selling price

is called the gross profit.

In order to find what the merchant actually makes or "clears", one must deduct the operating expenses from the gross profit. If the overhead and cost amount to less than the selling price the difference is the merchant's net profit. If the expenses and cost amounts to more than the selling price, the difference is the merchant's loss.

To find the profit or loss on the sale of any merchandise, subtract the cost from the selling price, then determine the difference between this amount and the expenses.

The following formula may be used:

Profit = Selling Price - cost - expenses

$$P = SP - C - E$$

EXAMPLE (1):

James' bicycle cost him $35. He paid 25¢ for registration, $2.85 for repairs and $1.50 for a horn and mudguard reflector. Soon after he bought it he moved to a distant community and sold his bicycle for $37.50. Did he make a profit or take a loss? How much?

Solution:

$2.85
1.50
.25
$4.60 Expenses

$37.50 Selling Price less $35.00 Cost = $2.50 Gross P.

$4.60 Expenses less $2.50 Gross Profit = $2.10 Loss.

EXAMPLE (2):

If George bought 100 boxes of Christmas cards for 60¢ per box, sold them for $1.00 a box and paid a friend $10.00 for helping him, how much profit did he make?

Solution:

100 X .60 = $60.00 Cost

100 X $1.00 = $100.00 Selling Price

$100 - $60 = $40 Gross Profit; $40 - $10 = $30 Net Profit.

A merchant must decide for how much he should sell his goods in order to pay his cost, expenses, and make a profit. This is done by adding to the cost his estimated expenses and the profit he wishes to make. The formula C plus E plus P = SP may be used.

EXAMPLE:

Jack, who liked to fix up old toys and sell them, bought an old cart for $1.00, repaired the wheels and handle, gave it two coats of paint. Expenses amounted to $1.25. He decided that the time it took him was worth a profit of $1.50. For how much did he sell it?

Solution:

$1.00 Cost plus $1.25 Expenses plus $1.50 Profit = $3.75 Selling Price.

Merchants also compute the expenses and profits of goods on a percentage basis.

EXAMPLE:

Two boys sold candy at a ball game. They had learned that their profit would be 20% of their sales. By the end of the game they had sold $75 worth. What was their profit?

Solution:

20% = .20; $75 X .20 = $15 Profit

Their expenses were only 5% of their sales. What amound did they set aside for this item?

Solution:

5% = .05; $75 X .05 = $3.75 Overhead

Probable Indirect and Incidental Learning Products

1. To gain accuracy in adding, subtracting, and multiplying decimal numbers.
2. To apply simple formulae in solving problems.
3. An understanding of some of the merchant's problems in buying and selling goods.
4. An appreciation of the reasons why some merchandise is more expensive to the consumer than others.

References for Teacher's Use

See references listed in Unit I.

The Unit Assignment

A. Introductory Activities

Time Allotment: Two weeks of four forty-minute directed activity periods and two undirected study periods.

Code: SU - Social Utilities Text

MSM - Modern School Mathematics Arithmetic Text

AP - Advanced Problems in Arithmetic Text

SG - Included in the study guide

HW - Suggested for home study

PH - Pamphlet

Introduce this topic with the story of a boy and his sister who decide to make money during their summer vacation by building and maintaining a fresh-fruit drink stand near a ball park. By teacher-pupil discussion develop the following concepts:

A. Mary and John are setting up a business, the foremost aim of which is to make money.

B. The costs of maintaining a business are principally

1. paying for the merchandise to be sold and

2. meeting the costs of starting and operating the business.

C. Goods must be sold at a price which will cover these costs.

D. More money must be added to this price to show a profit or make money.

The Unit Assignment

A. Introductory Activities

Time Allotment: Two weeks of four forty-minute directed activity periods and two undirected study periods.

Code: UU - Useful Utilities Text

MSM - Modern School Mathematics Arithmetic Text

AP - Advanced Problems in Arithmetic Text

SG - Included in the study guide

SM - Suggested for home study

TM - Template

Introduce this topic with the story of a boy and his sister who decide to make money during their summer vacation by building and marketing a fresh-fruit drink stand near a ball park. By brainstorming discussion develop the following concepts:

A. Mary and John are setting up a business, the foremost aim of which is to make money.

B. The costs of maintaining a business are principally

1. paying for the merchandise to be sold and

2. meeting the costs of starting and operating the business.

C. Goods must be sold at a price which will cover these costs.

D. More money must be added to the price to show a profit or make money.

As the discussion unfolds acquaint pupils with the terms cost, overhead or operating expenses, gross and net profit, and loss.

Ask pupils to contribute to a blackboard list of items which may be considered operating expenses. Use theoretical prices to show how cost plus overhead plus profit equals the selling price.

Show an industrial film which pictures the manufacturing and distributing of a common item. Request pupils to note carefully all materials and processes which suggest costs and operating expenses and to make a list of these directly after the showing. Discuss the lists and encourage further listing of expenses not readily apparent such as taxes and insurance costs.

Give a blackboard explanation of the procedure in finding profit or loss. Help pupils understand the use of the formula Profit = Selling Price - Cost - Expenses. Use many examples and invite some pupils to compute them at the board while others solve them at their desks.

B. Core Activities

(SG) Read about "The Profits of Mr. Burt's Pet Shop". Solve the first four problems on the next page. Pay special attention to the formula. (SU, pp. 190 and 191)

Recall to the class the reasons why merchants hold sales. Tie in with this the fact that at times merchants

As the discussion unfolds acquaint pupils with the terms cost, overhead or operating expenses, gross and net profit, and loss.

Ask pupils to contribute to a blackboard list of items which may be considered operating expenses. Use theoretical prices to show how cost plus overhead plus profit equals the selling price.

Show an industrial film which pictures the manufacturing and distributing of a common item. Request pupils to note carefully all materials and processes which suggest costs and operating expenses and to make a list of these directly after the showing. Discuss the lists and encourage further listing of expenses not readily apparent such as taxes and insurance costs.

Give a blackboard explanation of the procedure in finding profit or loss. Help pupils understand the use of the formula Profit = Selling Price - Cost - Expenses. Use many examples and invite some pupils to compute them at the board while others solve them at their desks.

B. Core Activities

(30) Read about "The Profits of Mr. Smith's Pet Shop". Solve the first four problems on the next page. Pay special attention to the formula. (SU, pp. 149 and 191)

Recall to the class the reasons why merchants hold sales. Tie in with this the fact that at times merchants

must sell goods at a loss. Give arithmetical examples at the board and have pupils complete several at their desks.

(SG)(HW) Keep in mind that a merchant sometimes loses money in his business. We decide the profit or loss by deducting the cost and expenses from the selling price. Compute all the problems and exercises on page 192 in your Social Utilities text.

Refer back to the story used in introducing this unit. Hold a teacher pupil discussion to show how the selling price of an item may be determined. Base the procedure on the formula Cost plus Expenses plus Profit = Selling Price. Give several problems to pupils to be completed immediately and check for correct procedure. (SU p. 193)

(SG)(HW) Solve the following problems:

1. John Carver bought an old bicycle for $5.00. He wished to sell it at a profit of $3.00. He fixed it up at a cost of $ .45 for paint, $4.75 for a chain, and $3.50 for a tire. What was his selling price?

2. A dealer in second hand cars bought a car for $250. Repairs cost him $46 and a new tire $32. He wanted to make a profit of $30. For how much did he sell it?

3. Mr. Adams wishes to make a profit of $150 on a boat that cost him $750. Painting and rigging the boat amounted to $125. What should the selling price be?

4. Henry Relay picked up a second hand radio for $10.

He replaced a tube costing $1.75 and condensers costing $2.85. Wiring amounted to $ .50 and Mr. Relay figured his time worth $1.00 an hour for 2-1/2 hours work. For how much should he sell the radio to make a net profit of $2.00?

5. Jack Smart took 8 pictures on a hiking trip. Other boys wanted sets. He decided to sell them at a profit of $ .10 per set. If the film and the prints cost $ .06 each how much did he charge for a set?

(SG) If you understand the meanings of cost, expenses, selling price and profit you should be able to find any one of these when all the rest are given. Choose ten of this kind to do. (SU p. 194)

Explain how many merchants compute profit as a per cent of the cost and the expenses on the same basis. Work out examples at the board and give pupils eight or ten to complete immediately.

(SG) Review the explanation of computing the profits as a per cent of the cost. Now try eight problems of this type. (SU p. 195)

(SG) Make a chart like the one suggested in the text. You may leave out the last column if you wish. If you decide to include this last column be sure to study the problems and their solution above the chart carefully. (MSM p. 160)

(SG) There is another method of finding the selling

price on a percentage basis. Choose this method if you wish but first read the explanation carefully. (SU p. 196, 1 to 8)

(SG) (PH) You may like to review what you have learned about profit and loss in business. Read the discussion "Making and Losing Money". Set down on paper complete sentences which show that you understand the meaning of net profit, gross profit, operating expenses, selling price and loss.

C. Optional Related Activities

Bring in some charts business men use to show profits, losses and expenses in their firms. Mount them on paper and explain their uses briefly.

Have you a hobby? Tell how you might plan a small business of your own based upon your hobby. Draw up a neat paper which will show cost of materials, overhead expenses, gross and net profit and selling prices.

Write two or three paragraphs explaining how you would conduct your business.

Are you planning to work during your summer vacation? Why not work for yourself? Outline your plan to buy and sell something. Include all your problems of starting your business, operating it and making a profit. Get an older

price on a percentage basis. Choose this method if you wish but first read the explanation carefully. (SB p. 185, 1 to 3)

(SB) (TM) You may like to review what you have learned about profit and loss in business. Read the discussion "Making and Losing Money". Set down on paper complete sentences which show that you understand the meaning of net profit, gross profit, operating expenses, selling price and loss.

D. Optional Related Activities

Bring in some charts business men use to show profits, losses and expenses in their firms. Mount them on paper and explain their uses briefly.

Have you a hobby? Tell how you might plan a small business of your own based upon your hobby. Draw up a neat paper which will show cost of materials, overhead expenses, gross and net profit and selling prices.

Write two or three paragraphs explaining how you would conduct your business.

Are you planning to work during your summer vacation? Why not work for yourself? Outline your plan to buy and sell something. Include all your problems of starting your business, operating it and making a profit. Get an older

person to help you formulate your ideas.

Do you sell or have you sold newspapers? Describe the work and explain how to determine profits. What are the operating expenses of a newsboy? Are there ever leases in selling newspapers? Write a complete report.

Write up a plan in which the student body of your school could make money to buy a moving picture projector. Include all expenses and estimate a profit.

Some merchants compute their expenses on the Selling price of merchandise. Find out about this and complete half a dozen problems of this type. (SU p, 197)

Get several pupils to help you write a skit (short play) in which you show how something may be bought, repaired and resold. Emphasize cost, expenses and profits. Present it to the class.

Often merchants, knowing that their expenses, overhead and profits will be a certain per cent of the selling price, mark their goods by this method. Study the explanation and complete some problems of this type. (SU p. 200)

Try your skill on various problems related to profit and loss. Complete ten or twenty of them. (AP, pp. 61 to 71)

Choose three or more kinds of business of which you have some knowledge. Make lists comparing their operating expenses.

Find out how a bank makes money, what its overhead expenses are and how its profits are computed. Report to the class.

Is your father a business man? Learn from him some of the causes of business losses and write a paper explaining them.

Ask a business man which he would rather do, raise the selling price of his goods or reduce his overhead. Why? Find out some ways of reducing operating expenses. Write up your report.

Compare the operating expenses of several kinds of businesses about which you may know or about which you can secure information. For instance, you might compare the differences in overhead between a hardware store and a bus company.

What types of businesses are regulated by state or national government? Why? Write a paper explaining this matter.

Think about the following questions carefully. Write complete statements giving your answers and reasons for them.

1. When would a merchant sell goods at less than cost?

2. Why are shipment charges counted as part of the cost of goods?

3. Should a merchant consider advertising as part of his operating expenses? Why? Who really pays for this advertising?

4. Another term for gross profit is margin. Why is this a good word?

5. Some businesses sell goods; others sell services. What is the difference? How would their operating expenses differ?

D. Evaluative Activities

When a pupil has completed the core activities he should take the following progress test. If he completes seven out of the ten items correctly allow him to select an optional activity if he so chooses. Should he fail to complete seven test items correctly analyze his difficulty

and offer further assistance until it is evident he has overcome his difficulty.

PROGRESS TEST - UNIT II

Find the answers to the following exercises and problems. Place the answers in the parentheses at the right after you have checked your work carefully.

1. In selling, the difference between what a merchant buys an article for and what he sells it for is the (_____profit).

2. Deducting the overhead from the gross profit gives us the(_____ _____).

Find the profit or loss of the following and state which it is:

	SELLING PRICE	COST	EXPENSES	PROFIT OR LOSS
3.	$325	$216	$48	( )
4.	149	98	56	( )
5.	510	432	64	( )
6.	275	214	37	( )
7.	110	73	28	( )

8. A boat cost $142 and was sold for $175. Did the merchant gain or lose if the overhead was $29? How much?

( )

9. A car that sold for $872 cost $695 and had an overhead of $143. What did the dealer make or lose?

( )

10. A merchant bought goods for $89. His operating expenses were 33 1/3% of the cost of his goods. What profit did he make on sales of these goods amounting to $615?

( )

E. References for Pupils Use

See references listed in Unit I

CHAPTER IV

ORGANIZING THE THIRD UNIT AND UNIT ASSIGNMENT

General Statement of the Unit

The general statement of this unit is included in the statement of the first unit, Chapter I.

Delimitation of the Unit

People who own no property usually rent it; in much the same way those who do not have money must rent it.

The rent one pays for the use of money is called "interest".

Renting money is called "borrowing".

The amount of money a person rents or borrows is the "principal".

The cost of borrowing money is based upon a per cent of the amount borrowed. This percentage is called the "rate of interest".

To borrow money @ 6% means that one must pay six cents for every dollar he uses during the period of one year. If the borrower extends the use of that money over a year, or less than a year, he must pay interest proportionate to the "time" he uses it based on what it would cost per year.

Although a person may pay rent for the house in which he lives, naturally he must turn over the property to his

landlord when he moves. When a person finishes with the money he has borrowed he not only pays all interest owed but returns the principal. This total sum is called the "amount".

Money is borrowed for a number of reasons. If a person does not have the cash to buy property or build or renovate a house, he may secure the use of it from a bank and pay back allotments he can afford every stated period. A business man may wish the use of money to build a store or start a business. Families borrow money so that they may get furniture, cars, boats, farm equipment, pay bills or finance an education. Communities borrow money for such purposes as erecting schools, hospitals, libraries and other useful structures. This money is paid back with interest through taxation. Our states and our national government do the same on a larger scale when the purpose is to build bridges, dams, highways, to aid slum clearances or to promote wars.

Rates of interest vary, but the most commonly used range from 1 to 7 per cent.

To compute the interest on any sum of money one must first multiply the principal by the rate of interest. The product is the interest one pays for the use of the money for <u>one</u> year.

EXAMPLE: Mr. Jones borrowed $800 and agreed to pay interest @ 6% at the end of one year. How much interest did he pay?

Solution: $800 principal X 6% or .06 equals $48 interest for one year.

If the principal is to be borrowed for more than one year, the product of the principle times the rate is multiplied by the number of years, or the time.

EXAMPLE: What interest would Mr. Jones pay if he should decide to use the money for three years?

Solution:

$800 prin. X .06 rate equals $48 int. X 3 (time) equals $144 int.

If the principal is to be borrowed for less than one year, the product of the principal times the rate is multiplied by the fractional part of the year.

EXAMPLE: Should Mr. Jones return the principal at the end of three months what interest would he pay?

Solution:

3 months equal 1/4 of one year or twelve months.

$800 X .06 equals $48 int. 1 year.

$48 X 1/4 equals $12 int. 3 months.

The formula "interest = principal X rate X time" may be used as a guide in finding interest.

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EXAMPLE: Mr. Jones borrowed $800 and agreed to pay interest @ 6% at the end of one year. How much interest did he pay?

Solution: $800 principal x .06 or .06 equals $48 interest for one year.

If the principal is to be borrowed for more than one year, the product of the principle times the rate is multiplied by the number of years, or the time.

EXAMPLE: What interest would Mr. Jones pay if he should decide to use the money for three years?

Solution:

$800 prin. X .06 rate equals $48 int. X 3 (time) equals 144 int.

If the principal is to be borrowed for less than one year, the product of the principal times the rate is multiplied by the fractional part of the year.

EXAMPLE: Should Mr. Jones return the principal at the end of three months what interest would he pay?

Solution:

3 months equal 1/4 of one year or twelve months.

$800 X .06 equals $48 int. 1 year.

$48 x 1/4 equals 12 int. 3 months.

The formula "interest = principal X rate X time" may be used as a guide in finding interest.

The principal plus the interest owed equals the amount.

EXAMPLE: When Mr. Jones returned the money at the end of 3 months what amount did he owe?

Solution:

$800 X .06 X 1/4 equals $12 int.

$800 prin. plus $12 int. equals $812 amount.

Money may be borrowed for a number of days and the banker or lender usually considers the year as based on 360 days, and the interest is computed on this basis.

EXAMPLE: What would be the interest on $600 for 40 days @ 6%?

Solution:

$600 prin. X .06 rate = $36 int. for 1 year.

40 days = 1/9 of 360 days (1 year)

$36 X 1/9 = $4.00 int. for 40 days.

Probable Indirect and Incidental Learning Products

1. The ability to use fractional equivalents in computing interest.

2. The ability to use Case I per cent accurately.

3. The ability to multiply and add decimals accurately.

4. An understanding that money, like certain property, may be borrowed but must be returned promptly and completely.

5. An understanding that lending money is a type of business.

6. An appreciation of the values of borrowing money.

7. An appreciation of the value of saving money so that it may not have to be borrowed.

8. An appreciation of the place of loans in our public and private economy.

9. An attitude of descrimination in borrowing money.

10. An attitude of thrift in lending money to banks as a form of saving.

11. An intelligent attitude toward the need of having a workable plan of repayment before a debt is contracted.

References for Teacher's Use

Bank Services for You, Pamphlet, Winchester Trust Company, Winchester, Massachusetts, 1947.

Small Loan Laws of the United States, Bulletin, Sixth Edition, Pollak Foundation for Economic Research, Jaffrey, New Hampshire, 1945.

Foster, William Trufant, Loan Sharks and Their Victims, Bulletin, Revised Edition, Public Affairs Committee, New York, New York, 1945.

Mergendahl, Charles H. and LeBaron R. Foster, One Hundred Problems in Consumer Credit, Pamphlet, Number 35, Pollak Foundation for Economic Research, Newton, Massachusetts, 1943.

See also References for Teacher's Use, Unit I

The Unit Assignment

A. Introductory Activities

Time Allotment: Two weeks of four forty-minute directed activity periods and two undirected study periods.

Code: SU - Social Utilities Arithmetic Text

MSM - Modern School Mathematics Text

AP - Advanced Problems in Arithmetic Text

SG - Included in the study guide

HW - Suggested for home study

On the day this unit is introduced advertisements related to borrowing money from banks and loan companies should be displayed on the bulletin board.

Relate the story of a boy who wished to build and operate a news-stand on property adjacent to a bus stop. Show how it is necessary for him to have a certain sum of money in order to buy lumber, construct and paint the stand and have available cash to buy his first lot of papers, magazines and candy. Tell the class that Fred Collins has a reliable friend, a business man, who will lend him $80 for one year for this purpose. Stimulate participation by the pupils by asking questions as (1) How is borrowing money like renting a house? (2) Does it cost anything to borrow money? (3) What term do we give to the "rent" we pay for borrowed money? (4) Mr. Mathews said he would lend

the money to Fred at a rate of 6% interest. What did he mean by that? (5) If Fred returns the money at the end of one year does he give back more than the $80 he borrowed? (6) In this example to what do the terms "principal", "interest", "rate of interest" and "amount" refer?

Use the blackboard to show the method of finding simple interest for one year at several rates of interest. Follow this with instructions for finding interest for periods of several years. Give an immediate class assignment of about ten exercises to be completed and checked during the laboratory period.

B. Core Activities

(SG) Bring in examples of money loans and interest which may be placed on the bulletin board.

(SG) (HW) Many persons borrow money. Why? For what reasons would a business man borrow money? Why does a family sometimes need borrowed money? Ask someone in your family to help you list the reasons. Write a paper on the subject.

(SG) You will need practice in finding the interest on sums of money at given times and stated rates of interest. Choose sixty to do. (SU p. 206; MSM p. 208; SU p. 207).

Discuss the method by which interest is found for

parts of a year. Ask pupils to compute several problems of this type under the teacher's direction (MSM p. 208).

(SG) Remember that the "amount" refers to the total sum paid back to the lender, that is, the principal plus the interest. Try your skill with problems asking for amounts. (MSM p. 209, (a) to (l))

Instruct pupils in the use of the formula I = P X R X T Have them complete several examples immediately using this formula.

(SG) In computing all future interest problems label each part appropriately as "int." for interest, "prin." for principal, "rt." for rate and "t" for time. Try eleven problems using these abbreviations. (SU p. 208).

(SG) Further practice on this type of exercise is necessary to gain skill. See if you have improved in speed and accuracy. (MSM p. 210, 1 to 12).

Show pupils how interest may be found for certain numbers of days. At the same time introduce the cancellation method as an optional means of solving interest problems.

(SG) Choose fifty exercises which involve finding interest for a number of days. Use the cancellation method if you wish. (SU p. 209 and MSM p. 211).

(SG) Look through the first fifty problems beginning on page 71 in the Advanced Problems in Arithmetic Text.

Choose any twenty of these to complete.

Check pupils' papers and note errors most frequently made. Use some of the laboratory period to re-emphasize certain important phases and procedures of the work.

C. Optional Related Activities

Make a chart showing the interests on the following sums of money at 6% interest for terms of 1 mo., 2 mo., 3 mo., 4 mo., 6 mo., 1 year, 1-1/2 years, 5 years, 12 years, 20 years: $500, $1000, $5000, $8000, and $10,000.

Make a comparison between what a bank pays depositors for the use of their money and the interest it charges in lending that money. Report this to the class and use the blackboard to give examples.

Why do loan companies charge greater interest for the money they lend than do banks. Write a report and include a chart showing the comparison between rates of interest charged by these loan companies and the rate of 6% interest charged by a bank.

Secure a government war bond of your own for one belonging to your family. Compute the interest Uncle Sam would owe you if you cashed it now. Compare this with the interest you would get if you cashed it on its date of maturity.

Choose any twenty of these to complete.

Check public papers and note errors most frequently made. Use some of the laboratory period to re-emphasize certain important phases and procedures of the work.

C. Optional Related Activities

Make a chart showing the interests on the following sums of money at 6% interest for terms of 1 mo., 2 mo., 3 mo., 4 mo., 8 mo., 1 year, 1-1/2 years, 5 years, 10 years, 20 years: $500, $1000, $5000, $8000, and $10,000.

Make a comparison between what a bank pays depositors for the use of their money and the interest it charges to lending that money. Report this to the class and use the blackboard to give examples.

Why do loan companies charge greater interest for the money they lend than do banks. Write a report and include a chart showing the comparison between rates of interest charged by these loan companies and the rate of 6% interest charged by a bank.

Secure a government war bond of your own for one belonging to your family. Compute the interest Uncle Sam would owe you if you cashed it now. Compare this with the interest you would get if you cashed it on its date of maturity.

What is meant by compound interest? Describe its use and give two arithmetical examples in which you compute the interest. (MSM p. 222 - 224)

Business men use a term called "lost interest". Study this subject and complete five problems related to it. (SU p. 212 - 213).

The United States Government uses "exact interest" in computing its loans. Learn the method of finding it and compute ten problems of this type. (SU pp. 214 - 215).

Study the procedure of finding interest by the "6% method". Compute five exercises using this method. (SU pp. 217 - 218).

Find out how people borrow money for the purpose of building houses. From what source do they usually get the money? About what rates of interest are paid? When are principal and interest paid back? What is the meaning of "mortgage"? Report your findings to the class.

The rate of interest one pays for the use of money depends greatly upon what is known as "risk". Find out all you can about this. Write a report giving specific examples.

Make a report to the class telling what rates of

interest towns, states and the national government pays for borrowed money. Why is the interest so low?

Why do municipalities, states, and the federal government need to borrow money? For what different purposes is this money used? By what means is it paid back? How is the money secured? Write a report on this subject.

How is the term "collateral" used in the lending of money? Make a report giving clear examples to illustrate its meaning.

Find out how a pawn shop operates. How does a person obtain money from such a place? What interest is usually charged? Report to the class.

D. Evaluative Activities

When a pupil has completed the core activities have him take the following progress test. If he completes seven out of the ten items correctly allow him to select an optional activity if he so chooses. Should he fail to complete seven test items correctly analyze his difficulty and offer further assistance until it is evident he has overcome his difficulty.

PROGRESS TEST UNIT III

Find the answers to the following exercises and problems. Place the answers in the parentheses at the

right after you have checked your work carefully.

Find the interest on

1. $1200 for 2 years at 5% ( )
2. $4050 for 1 year at 2-1/2% ( )
3. $750 for 6 months at 3% ( )
4. $1000 for 30 days at 6% ( )
5. $8500 for 11 years at 4-1/2% ( )
6. $10,000 for 5 years at 3-1/2% ( )
7. Hugh put $120 to work by lending it to his father for 2 years at 5%. How much interest did Hugh get in the 2 years? ( )
8. Mary invested $50 at 5% interest. How much did the $50 earn for her in 6 months?
9. Helen has $250 in a bank which pays 2% interest every six months. How much will her money earn for her at the end of the first 6 month period? ( )
10. Mr. Hayes offered to sell his $1200 car for $800 cash and take the remainder in 4 months at 6%. How much did he receive in all for his car?

At the completion of the time allotment for Unit III give the following test which covers all three units. Let the superior pupils determine by their progress how many minutes should be allowed for its completion.

FINAL ACHIEVEMENT TEST

Part I

What to do: Read each statement carefully choosing the word or phrase which completes it correctly. Make a circle around the letter beside the word or phrase you choose.

Example:

A common term which refers to discount is

a. price
(b.) mark-down
c. cost
d. expense

1. When we purchase goods at a discount we usually

a. pay the full price
b. pay more than usual
c. save money
d. lose money

2. Storekeepers offer discounts to

a. make more money
b. attract customers
c. compete with other storekeepers
d. fool the public

3. A dealer in furs would probably have a sale

a. in the fall
b. during the winter
c. at springtime
d. all year round

4. Many merchants sell goods at a discount which are

a. slightly damaged
b. useless
c. scarce
d. high priced

5. An example of a business concern which frequently offers customers discounts is the

a. ten-cent store
b. public utility
c. insurance company
d. bank

6. A gas company may offer regular discount to encourage

a. prompt payment
b. use of more fuel
c. more business
d. more customers

7. A consumer may tell a true discount from a false discount by

a. cross examining the merchant
b. examining the goods
c. comparing prices at reliable stores
d. buying elsewhere

8. The term fraction of original price refers to

a. discount
b. cost
c. overhead
d. expense

9. The usual amount of money a merchant asks for goods he sells is called the

a. cost
b. regular price
c. profit
d. loss

10. The sum of money a merchant subtracts from the marked price is the

a. regular price
b. rate
c. discount
4. per cent

11. The per cent used to decide how much shall be reduced from the regular selling price is the

a. discount
b. rate of discount
c. net price
d. selling price

12. The new price found by discount is known as the

a. net price
b. gross price
c. loss
d. profit

13. The discount is found by multiplying the marked price by

a. the gross price
b. net price
c. rate of discount
d. discount

14. When we subtract the discount from the marked price we get the

a. discount
b. net price
c. rate
d. selling price

15. A merchant sells goods

a. to get them cheaper for himself
b. to make money
c. for fun
d. to buy more goods

16. A storekeeper makes a profit if he sells merchandise

a. at cost
b. at a discount
c. for more than cost
d. at less than cost

17. If his cost is greater than his selling price he

a. makes a profit
b. takes a loss
c. breaks even
d. sells at a discount

18. The money a business man pays for his goods is called the

a. cost
b. loss
c. margin
d. profit

19. Certain operating expenses such as salaries, rent, taxes, and insurance are known as

a. loss
b. bookkeeping
c. margin
d. overhead

20. What a business man asks his customers to pay for goods is the

a. selling price
b. wholesale price
c. gross cost
d. net price

21. The difference between the cost and the price for which goods are sold is the

a. net profit
b. gross profit
c. profit
d. overhead

22. If the cost of goods and the operating expenses are more than the selling price, the merchant

a. makes a profit
b. breaks even
c. takes a loss
d. borrows money

23. When the selling price is more than the cost and overhead the merchant

a. makes a profit
b. sells at a discount
c. loses
d. breaks even

19. The money a business man pays for his goods is called
the

a. cost
b. loss
c. margin
d. profit

18. Certain operating expenses such as salaries, rent,
taxes, and insurance are known as

a. loss
b. bookkeeping
c. margin
d. overhead

20. What a business man asks his customers to pay for goods
is the

a. selling price
b. wholesale price
c. gross cost
d. net price

21. The difference between the cost and the price for which
goods are sold is the

a. net profit
b. gross profit
c. profit
d. overhead

22. If the cost of goods and the operating expenses are
more than the selling price, the merchant

a. makes a profit
c. breaks even
c. takes a loss
d. borrows money

23. When the selling price is more than the cost and over-
head the merchant

a. makes a profit
b. sells at a discount
c. loses
d. breaks even

24. Borrowing money is very much like

a. renting property
b. buying a house
c. selling goods
d. being insured

25. What a person pays for the use of money is called

a. a fine
b. rate of interest
c. interest
d. principal

26. The amount of money a person borrows is the

a. rate
b. interest
c. principal
d. discount

27. The "rate of interest" refers to the

a. time
b. per cent of the principal
c. amount
d. bank

28. To borrow money at 6% means to pay an interest of six cents for

a. every dollar borrowed
b. every one hundred dollars
c. every thousand dollars
d. every cent borrowed

29. If the borrower uses the money for more or less than one year, he pays interest based upon what it would cost to use it for

a. 60 days
b. one month
c. one day
d. one year

24. Borrowing money is very much like

a. renting property
b. buying a house
c. selling goods
d. being insured

25. When a person pays for the use of money is called

a. a fine
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a. time
b. per cent of the principal
c. amount
d. bank

28. To borrow money at 6% means to pay an interest of six cents for

a. every dollar borrowed
b. every one hundred dollars
c. every thousand dollars
d. every cent borrowed

29. If the borrower uses the money for more or less than one year, he pays interest based upon what it would cost to use it for

a. 30 days
b. one month
c. one day
d. one year

30. When a person no longer needs the use of borrowed money he

a. returns the principal with interest
b. pays the interest and keeps the money
c. returns the principal without interest
d. keeps the principal and interest

31. Money should be borrowed only by persons

a. who cannot live within their incomes
b. who do not earn enough money to meet their needs
c. who can pay it back out of the money they earn
d. who are dishonest

Part II

What to do: Compute the following exercises accurately using the math paper given to you for side figuring. Place your answer in the parenthesis beside the example.

Here are the regular prices of articles and the rates of discount. Find the net price of each.

37. $30, 8% ( )
38. $600, 12% ( )
39. $700, 15% ( )
40. $440, 7-1/2% ( )
41. $564, 12-1/2% ( )
42. $794, 33-1/3% ( )
43. $465, 16-2/3% ( )
44. $585.20, 10% ( )
45. $812.75, 40% ( )
46. $932.25, 36% ( )

In the following examples find the profit or loss. Be sure to label your answers.

	COST	EXPENSES	SELLING PRICE	PROFIT OR LOSS
47.	$123	$82	$225	( )
48.	$175	$160	$225	( )

49.	$350	$263	$665	( )
50.	$13.25	$5.00	$20.00	( )
51.	$525	$378	$875	( )
52.	$33.79	$30.75	$60.98	( )
53.	$21.49	$19.39	$44.98	( )
54.	$45.50	$32.00	$84.75	( )
55.	$25.80	$18.35	$48.75	( )
56.	$525	$378	$925	( )

Find the interest on the following sums:

	PRINCIPAL	TIME	RATE	
57.	$600	1 yr.	4%	( )
58.	$590	1 yr.	3%	( )
59.	$240	1 yr.	5%	( )
60.	$485	1 yr.	4-1/2%	( )
61.	$985	3 yr.	4%	( )
62.	$850	4 yr.	5%	( )
63.	$767	2 yr.	5-1/2%	( )
64.	$625	8 mo.	6%	( )
65.	$600	11 mo.	4%	( )
66.	$360	9 mo.	4%	( )
67.	$400	17 da.	5%	( )
68.	$720	42 da.	7%	( )
69.	$1250	9 mo. 22 da.	4%	( )
70.	$6850	4 mo. 15 da.	5%	( )

Part III

What to do: Work out the following problems only after you have read each one carefully. Use the math paper for figuring and place your answers in the parentheses beside the problems.

71. John Smith had saved $4.00 with which to buy a football. The one he wanted cost $4.95. The storekeeper told John that he would sell it to him at a discount of 20% if he would distribute some hand bills for him. What was the net price of the football? ( )

72. George decided to start a news-stand at a bus stop. He borrowed $80 @ 6%. At the end of a year he paid back $50 of the principal with interest. What was the amount? ( )

73. George kept the remaining $30 of the principal for another year. When he paid this back how much interest had he paid for the use of the money in two years? ( )

74. George paid $10 per month as rent for the space his stand occupied. It cost him $12 a year to keep it repaired and painted. His sale of newspapers averaged 2500 per month on which he made a gross profit of one cent for

each paper sold. What was his net profit each month?

( )

75. When George decided to build a larger and better newsstand he sold his old one at a discount of 33-1/3%. For how much did he sell it if he decided it cost him $97?

( )

76. A boy and his father wish to buy a sailboat for $450. They decide to borrow the money for two years at six per cent and have the use of the boat while they are saving for it. How much more did the boat cost them than if they had paid cash for it? ( )

77. A boy bought a second hand bicycle for $12. He mended the chain for 75¢, bought a new tire for $3.75, estimated it cost him $1.25 to scrape and paint it. What was his profit if he sold it for $21? ( )

78. If Mary buys a dress she likes marked $10.75 at a sale offering a 20% discount, how much money does she save?

( )

79. Mrs. Jones decided her gas bill averaged $2.85 per month. How much money would she save in a year by paying her bill promptly and receiving a 5% discount? ( )

80. On a coal bill that Mr. Paine received he noted that he could discount 3% of the total if he paid it within 10 days. If he had bought 5 tons of coal at $19 per ton, how much did he save by paying promptly? ( )

81. I received a "discount card" from a certain furniture dealer in a distant city which read, "You may enjoy an eight per cent discount on any merchandise bought in this store". How much money would I save on a chair selling for the regular price of $38.50? ( )

82. I found a nearby merchant selling the same chair at a regular price of $35. Did the card from the first merchant offer a true discount? Answer yes or no. ( )

83. Mr. Sample's store cellar was flooded by water damaging some sporting equipment worth $465 at the selling price. He was compelled to sell it all at a discount of 50%. If it cost him $210 to replace the merchandise what real loss did the damage cost him? ( )

84. A newspaper advertised a sale of boys' clothing at one-third off. What would the net price on a suit be if the marked price was $14.92? ( )

85. Alice sold lemonade at the school fair. She bought 30 lemons at 3 for 5¢ and 15¢ worth of sugar. She sold

27 glassfuls of lemonade at 5¢ each. How much profit did she make? ( )

86. Two boys decided to sell Christmas cards. They bought 200 boxes @ 60¢ each and sold them for a profit of 66 2/3% of the cost. What was their total profit? ( )

87. Mr. Harvey owned a small hardware store. His rent was $150 a month, he paid salaries amounting to $480, his light and telephone bills were $35, advertising $80, taxes $75, insurance $12.50, repairs $40 and shipping charges $24.50. What was Mr. Harvey's overhead for the month? ( )

88. During the same month Mr. Harvey bought some merchandise costing $1,250. What was his net profit if his sales for the month amounted to $3,560? ( )

89. The students of Norwood Junior High School planned a dance to make money for their school gift fund. They were sure of selling 200 tickets. The orchestra would cost $60, refreshments $12 and janitor service $3. For how much should they sell each ticket to make a profit of $45? ( )

90. Elwood's father agreed to borrow money to pay his expenses in college if Elwood would earn money during the

27 glassfuls of lemonade at 5¢ each. How much profit did she make? ( )

86. Two boys decided to sell Christmas cards. They bought 200 boxes @ 60¢ each and sold them for a profit of 66 2/3% of the cost. What was their total profit? ( )

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88. During the same month Mr. Harvey bought some merchandise costing $1,250. What was his net profit if his sales for the month amounted to $3,500? ( )

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90. Elwood's father agreed to borrow money to pay his expenses in college if Elwood would earn money during the

summer to pay the interest. How much of his summers' earnings did he pay to cover interest on $3600 for 4 years at 6% if his father paid back $900 of the principal at the end of each year? ( )

91. Mr. Hansen bought a house. He borrowed $5000 at 5-1/2% interest and agreed to pay back 10% of the principal each year. What interest was he paying at the end of the second year? ( )

92. The town of Lakeville decided to build a school house costing $500,000. They were able to secure this money at the rate of 2-1/2%. How much money in taxes would have to be collected to pay one year's interest on the principal? ( )

93. A merchant borrowed $15,000 at 4-1/2%. If he paid interest every six months, what would the charge for this service be at each payment period? ( )

94. A man borrowed $1710 to buy a car. At the end of 75 days he was able to pay it back with interest at 6%. What was the amount? ( )

95. John's father was sent to a hospital after an automobile accident in which he was injured. He had no accident insurance and was obliged to pay a hospital bill

of $320. He had to borrow the money and paid it back in 8 months with interest at 6%. An insurance policy would have cost him $9.00 for that period of time and paid all but $50 of his hospital bill. How much did the man lose by not having insurance? ( )

E. References for Pupils Use

See references listed in Unit I

CHAPTER V

TEACHING THE UNIT

A log of the teacher's observation and experience. Following a teacher-pupil discussion relative to a desirable laboratory class procedure to be adopted, the agenda outlined below was chosen.

A. First fifteen minutes of period

1. Discussion of new terms, principles and procedures developed from problems outlined in the study guide.

2. Attention to difficulties encountered by pupils during previous day; pupils' contributions at blackboard.

3. Bulletin material submitted to committee (of three in each division) for inspection and posting.

B. Second twenty minutes of period

1. Pupils work on problems at their desks.

2. Consultation between pupils about problems of mutual interest (to limit confusion only two consultations allowed at one time).

3. Secure individual assistance on problems and exercises from the teacher.

4. Take progress tests when core activities are completed.

C. Last five minutes for teacher's instructions to pupils relative to pertinent matters bearing upon the assignment.

Unit I - First Week

The mathematics room is not equipped to show films, therefore an exchange was made with the science laboratory in advance of the showing. The following set of questions was placed on the blackboard before the picture was shown and pupils were requested to keep them in mind during the filming:[1/]

1. When in the film story did Bill save money by making a purchase at less than the ordinary price?

2. Was the difference between what Bill's animals cost him and what he sold them for all clear profit? Why?

3. When Bill started his business how did he probably secure the necessary money if he had none of his own?

4. Does one necessarily have to be an adult in order to engage in business practices?

5. What part does neatness and accuracy play in keeping careful business records?

6. How important are business practices in our daily lives?

1/ See appendix for information regarding this film.

Practically all pupils responded enthusiastically to this introduction. Their contributions to the discussion which were lively and intelligent convinced the teacher that this type of visual aid in teaching arithmetic should have wider use.

The bulletin board was arranged as planned. It attracted attention and stimulated interest. When pupils were invited to bring material for the bulletin the response was entirely satisfactory.

The second day was given over to the introduction of the study guide and a discussion of classroom procedure. Pupils were introduced to the selection and use of the optional related activities which had been typed on five by eight cards and placed at their disposal on the table at the front of the room.

The only difficulty encountered during the first week was brought about by a lack of enough texts to be used by pupils during study periods or at home. The number of single texts which pupils had used during the year was adequate, but reference texts had to be used only during the laboratory period in order to insure fair accessibility. When pupils became used to this restriction there was little further trouble.

Unit I - Second Week

The pupils worked well during the instructional periods but the teacher found it necessary to shorten the first part of the period in order to give more attention to helping individual pupils.

As the end of the allotted time for the first unit approached, a check on pupil progress found many working slowly or leaving much of their work to the last minute. As a result some were required to take the progress test without having fully completed the core activities.

There was but one process in discount which caused considerable difficulty. The difference between finding "savings" or discount and net price seemed to need repetitive explaining.

Failure to "point off" decimals correctly (a carry-over from the study of per cent) gave a few pupils trouble and was the cause of some poor marks in the first progress test.

Pupils needing corrective instruction were asked to see the teacher during work periods or after school. Help on this unit was terminated when the child could complete eight or ten problems, of the type causing trouble, correctly. This help was extended over the third week while pupils were working on the second unit.

Although many pupils inspected the optional related

activities only ten chose one to complete.

Unit II - First Week

"Sand and Flame", a twenty-minute sound movie which helped to introduce the second topic, depicted the manufacture of glass and emphasized the making of the product for the automobile industry.[1] The teacher's purpose in showing it was to bring to light the many items classified as "overhead" or operating expenses in a business or industry. Pupils were asked to list as many of these as they could jot down during the showing, and a few moments were given following the movie for completing the list. The response was gratifying. In addition to listing such overhead items as rent, light, heat, salaries, insurance and advertising the youngsters were able to point out more than a dozen other related items. As a result of this procedure the teacher found it unnecessary to spend much further time in the explanation and importance of overhead in calculating profit and loss.

The teaching of the unit and the pupils' work on the problems proceeded satisfactorily. There was some trouble related to section six of the study guide where many students needed individual help in plotting the chart.

1/ See appendix for information regarding this film.

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1/ See appendix for information regarding this film.

Here again simple percentage was applied to finding overhead and a further deductive process in finding cost. It involved nothing that the pupil did not readily grasp from a brief explanation, but the teacher was surprised that any help whatever should be needed at this point except, of course, for the slower members.

Unit II - Second Week

There was considerable improvement in the grade as a whole regarding the completion of core activities. Fewer pupils lagged, but no more than a half dozen took the progress test before the deadline.

The progress test on this unit showed less need for corrective activity. Twelve of those who failed the test did so because of inaccuracies rather than misunderstandings of procedure.

Seventeen pupils attempted to complete optional activities. Four of these wrote a skit which concerned the buying and selling of merchandise. They presented it to their division members. Had the teacher found it possible to afford the time it might have been more completely developed and played before all divisions of the seventh grade.

Unit III - First Week

Pupils responded well to the introductory activities of the third unit. They seemed to understand how to

compute simple interest for a number of years and the assignments related to it offered no difficulty. Numerous pupils complained about the length of time needed to complete the third, seventh, and eighth problems.

Some difficulty was encountered by pupils during the computations of interest for odd numbers of days as when, for example, seventeen over three hundred sixty represented the part of a year's interest to be found. The cause was clearly a case of inexperience in handling large fractions.

Despite emphasis made in class regarding the difference between interest and amount many pupils were required to repeat the exercises in problem IV of the study guide. It is probable that this mistake was caused by inattentiveness in class disucssions or carelessness in reading directions.

Unit III - Second Week

Spring vacation interrupted the third unit, but the pupils seemed to have little trouble picking up the threads and continuing where they had dropped it. An additional three days beyond the estimated time allotment was given because a great many pupils had failed to complete the core activities. Furthermore, the teacher felt it important to devote a laboratory period to a general oral review of the three units before giving the final achievement test.

Eight pupils chose optional activities to complete. Two boys constructed an interest chart which was accurately and attractively completed. At the suggestion of several pupils all students were invited to submit their three units in notebook form, as an optional activity; many of these were well done.

The instructor was pleased with the manner in which nearly all pupils approached the final achievement test. Somewhat over two periods - one hour and twenty minutes - were alloted to this examination. Interest and concentration was a rule, rather than an exception, throughout the entire testing period.

Achievement of pupils as measured by a series of objective tests. At the completion of each progress test the tests of those pupils who failed to work at least seven items correctly were analyzed for causes of difficulty. In instances when the reason for failure could be attributed to misunderstanding of procedure, the pupils were given corrective instruction during work periods until they were able to compute ten similar examples without further trouble. When the reason for failure was clearly lack of accuracy in the computation of fundamental processes, pupils were asked to go over their tests, discover their errors and make the corrections.

Of the sixty-four pupils who failed to compute seven out of ten items in Discount (Test I) correctly, thirty-three needed corrective instruction; in Profit and Loss (Test II) twenty out of the forty-three failures received further help; on the test in Interest (Test III) twenty-six out of forty-eight pupils failing needed additional guidance.

One hundred ninety pupils taking the final achievement test in Business Practices had also taken the Stanford Arithmetic Achievement Test, Form E, early in the first term. The results of these tests compare favorably; that is, the class as a whole did as well in their study of

business practices by the unit method as might be expected of it from an examination of their general achievement in arithmetic. The histograms of both tests, showing the relative growth scales,[1] indicate placements closely similar. With the exception that there are five fewer frequencies in group four and six more in group two of the final test the distribution is virtually the same.

Examination of the individual pupil scores of both tests from the viewpoint of their placements in the final achievement test distribution reveals one hundred forty-five scores within one standard deviation of their placements in the Stanford Achievement test; twenty-two were over one standard deviation above, and twenty-three over one standard deviation below. The distribution of these variances are illustrated as follows:

Table 1. Comparison of Pupil Placement in the Final Business Practice Achievement Test with Placements in the Stanford Achievement Test

Standard Deviation Below				Equal Placement		Standard Deviation Above			
2	1-1/2	1	1/2		1/2	1	1-1/2	2
-	--	-	-		-	-	--	-
8	10	5	30	59	56	12	9	1

1/ See Chapter XX in Fundamentals of Secondary-School Teaching.

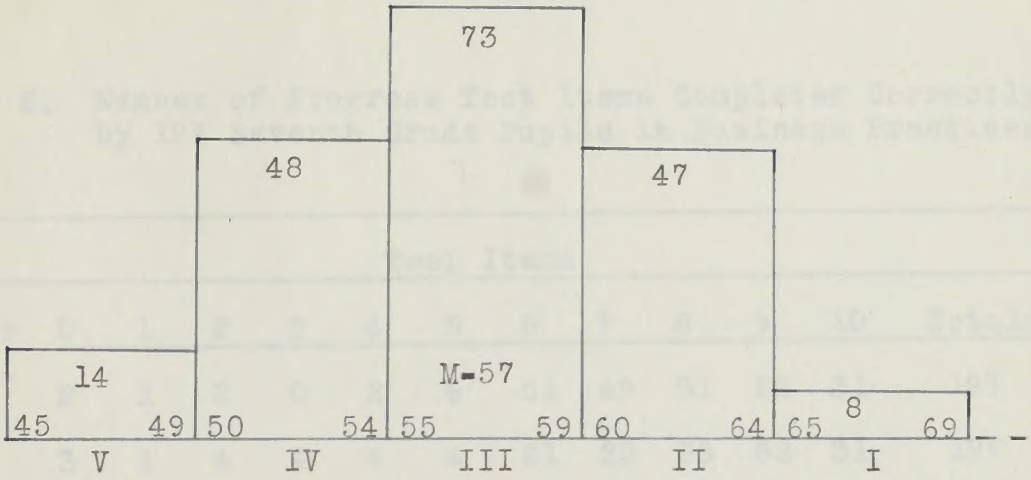

Figure 1

Relative Growth Scale Showing Distribution of 190 Scores on Stanford Arithmetic Achievement Test

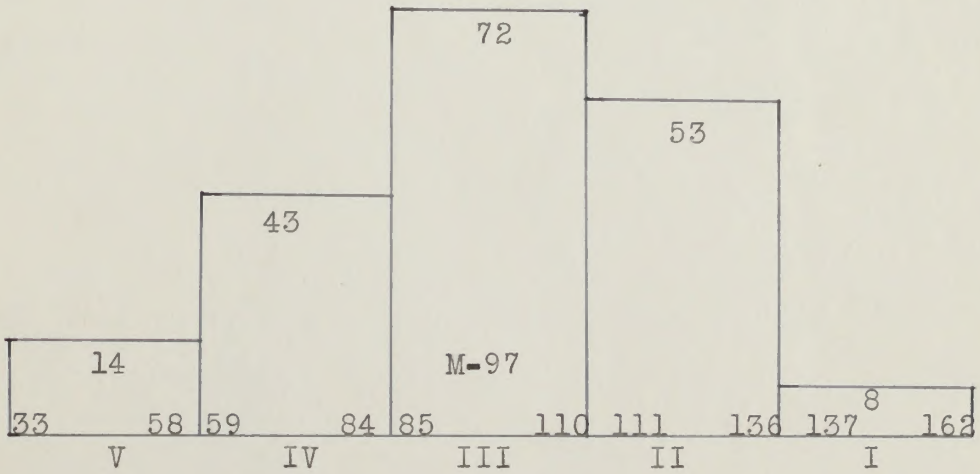

Figure 2

Relative Growth Scale Showing Distribution of 190 Scores on Achievement Test in Business Practice

Table 2. Number of Progress Test Items Completed Correctly by 197 Seventh Grade Pupils in Business Practices

Test Number	Test Items											
	0	1	2	3	4	5	6	7	8	9	10	Totals
I	2	1	2	0	2	6	51	49	31	22	31	197
II	3	1	4	4	4	4	21	25	38	62	31	197
III	0	3	2	2	11	12	18	40	43	47	18	196 *

* One pupil left school before test III was given.

Table 3. Frequency Distribution of 190 Seventh Grade Pupils' Scores on the Stanford Achievement Test Form E

(1) Class Interval	(2) F	(3) D	(4) FD	(5) FD^2
75-76	1	10	10	100
73-74	1	9	9	81
71-72	2	8	16	128
69-70	0	7	0	0
67-68	1	6	6	36
65-66	3	5	15	75
63-64	12	4	48	192
61-62	19	3	57	171
59-60	24	2	48	96
57-58	31	1	31	31
55-56	34	0	0	0
53-54	20	-1	-20	20
51-52	23	-2	-46	92
49-50	14	-3	-42	126
47-48	3	-4	-12	48
45-46	2	-5	-10	50
	N=190		(/ 110)	1246

M = 56.7

S.D. = 4.98 or 5

Table 4. Frequency Distribution of 190 Seventh Grade Pupils' Scores on the Business Practices Achievement Test

(1) Class Interval	(2) F	(3) D	(4) FD	(5) FD^2
151-160	1	6	6	36
141-150	5	5	25	125
131-140	15	4	60	240
121-130	14	3	42	126
111-120	26	2	52	104
101-110	30	1	30	30
91-100	27	0	0	0
81-90	27	-1	-27	27
71-80	18	-2	-36	72
61-70	11	-3	-33	99
51-60	8	-4	-32	128
41-50	4	-5	-20	100
31-40	1	-6	- 6	36
21-30	3	-7	-21	147
	N=190		(/ 40)	1270

M = 97.1

S. D. = 25.8

Table 5. Comparison of Relative Growth Scales of the Stanford Achievement Test in Arithmetic with The Final Achievement Test in Business Practice

Pupil	Stanford Test Score	Group	Business Test Score	Group
Langdon S.	75.5	I	137	I
Raymond H.	73.0	I	121	II
Jost M.	72.0	I	133	II
Robert T.	72.0	I	150	I
Susan M.	68.0	I	145	I
Richard S.	66.5	I	113	II
Carol A.	66.0	I	129	II
Lois B.	66.0	I	137	I
Ethan M.	64.5	II	85	III
Lester M.	64.5	II	110	III
Sona N.	64.5	II	133	II
Douglas H.	64.0	II	117	II
Janice L.	63.5	II	143	I
Sanford M.	63.5	II	89	III
Thomas Q.	63.5	II	126	II
James F.	63.0	II	153	I
Robert F.	63.0	II	114	II
Susan M.	63.0	II	114	II
Michael N.	63.0	II	135	II
Douglas Ham	63.0	II	115	II
Katheryne C.	62.5	II	111	II
Henry D.	62.5	II	101	III
Stowell S.	62.5	II	127	II
Gretchen D.	62.0	II	136	II
Joan O.	62.0	II	125	II
Richard R.	62.0	II	120	II
Earl C.	61.5	II	114	II
John F.	61.5	II	90	III
Carolyn P.	61.5	II	145	I
John L.	61.5	II	93	III
William D.	61.0	II	82	IV
Sandra D.	61.0	II	131	II
Paul L.	61.0	II	100	III
Gretchen L.	61.0	II	128	II
Charles M.	61.0	II	113	II
Richard P.	61.0	II	72	IV
Margaret R.	61.0	II	120	II
Winthrop S.	61.0	II	94	III
Prescott K.	61.0	II	119	II
John Di.	60.5	II	132	II
Brenda B.	60.5	II	124	II
John B.	60.0	II	108	III

Table 8. Comparison of Relative Growth Scales of the Stanford Achievement Test in Arithmetic with The Final Achievement Test in Business Practice

Pupil	Stanford Test Score	Group	Business Test Score	Group
Langdon S.	75.5	I	137	I
Raymond H.	75.0	I	131	II
Josh M.	72.0	I	153	II
Robert T.	72.0	I	150	I
Susan M.	68.0	I	145	I
Richard S.	66.5	I	113	II
Carol A.	66.0	I	128	II
Lois B.	65.0	I	127	I
Ethan M.	84.5	II	85	III
Lester N.	84.5	II	110	III
Sona M.	84.5	II	133	II
Douglas R.	64.0	II	117	II
Janice L.	83.5	II	143	I
Sanford M.	83.5	II	89	III
Thomas G.	83.5	II	128	II
James P.	83.0	II	153	I
Robert T.	83.0	II	114	II
Susan M.	83.0	II	114	II
Michael N.	83.0	II	135	II
Douglas Ham	83.0	II	113	II
Katherine C.	82.5	II	111	II
Henry D.	82.5	II	101	III
Stowell S.	82.5	II	127	II
Gretchen D.	82.0	II	136	II
Joan O.	82.0	II	128	II
Richard R.	82.0	II	130	II
Karl C.	81.5	II	114	II
John F.	81.5	II	90	III
Carolyn P.	81.5	II	143	I
John L.	81.5	II	83	III
William D.	81.0	II	89	IV
Sandra D.	81.0	II	131	II
Paul L.	81.0	II	100	III
Gretchen L.	81.0	II	128	II
Charles M.	81.0	II	113	II
Richard P.	81.0	II	92	IV
Margaret R.	81.0	II	130	II
Winthrop S.	81.0	II	94	III
Prescott K.	81.0	II	119	II
John Dl.	80.5	II	132	II
Brenda B.	80.5	II	124	II
John B.	80.0	II	108	III

Pupil	Stanford Test Score	Group	Business Test Score	Group
Richard C.	60.0	II	110	III
Lorraine C.	60.0	II	132	II
David F.	60.0	II	78	IV
Thomas G.	60.0	II	79	IV
Cynthia H.	60.0	II	122	II
Rodney L.	60.0	II	116	II
Norman M.	60.0	II	135	II
Edward Mc.	60.0	II	104	III
Richard Mc.	60.0	II	124	II
Charles Mir.	60.0	II	103	III
Donald R.	60.0	II	125	II
Ellen S.	60.0	II	124	II
Carl Z.	60.0	II	120	II
George De.	59.5	III	103	III
Diane G.	59.5	III	141	I
David B.	59.0	III	134	II
Marilyn C.	59.0	III	83	IV
Scott C.	59.0	III	101	III
Cynthia E.	59.0	III	104	III
Toddy K.	59.0	III	96	III
Bette N.	59.0	III	134	II
Donald C.	58.5	III	133	II
John G.	58.5	III	108	III
Gerald M.	58.5	III	102	III
William M.	58.5	III	67	IV
Anna S.	58.5	III	103	III
Carol A.	58.0	III	105	III
Judith B.	58.0	III	105	III
Phyllis D.	58.0	III	101	III
Janet E.	58.0	III	108	III
Kenneth F.	58.0	III	123	II
Judith H.	58.0	III	97	III
Dorothy L.	58.0	III	109	III
Carol M.	58.0	III	118	II
Thomas Mc.	58.0	III	92	III
Mary O.	58.0	III	97	III
Harold Q.	58.0	III	119	II
Lynne S.	58.0	III	115	II
Peter St.	58.0	III	127	II
Carolyn B.	57.5	III	102	III
Paul C.	57.5	III	108	III
Gerald C.	57.5	III	136	II
Judith M.	57.5	III	98	III
William S.	57.5	III	92	III
Bruce C.	57.0	III	118	II
Dorothy E.	57.0	III	86	III

Pupil	Stanford Test Score	Group	Binjhara Test Score	Group
Richard C.	80.0	II	110	III
Lorraine D.	80.0	II	132	II
David F.	80.0	II	76	IV
Thomas C.	80.0	II	79	IV
Cynthia E.	80.0	II	128	II
Rodney L.	80.0	II	118	II
Norman M.	80.0	II	135	II
Edward Mc.	80.0	II	104	III
Richard Mc.	80.0	II	134	II
Charles Mir.	80.0	II	105	III
Donald R.	80.0	II	135	II
Allen S.	80.0	II	124	II
Carl Z.	80.0	II	120	II
George De.	59.5	III	105	III
Diane C.	59.5	III	141	I
David S.	59.0	III	134	II
Marilyn C.	59.0	III	85	IV
Scott C.	59.0	III	101	III
Cynthia E.	58.0	III	104	III
Teddy K.	59.0	III	98	III
Bette N.	59.0	III	134	II
Donald C.	58.5	III	135	II
John C.	58.5	III	108	III
Gerald M.	58.5	III	102	III
William M.	58.5	III	87	IV
Anna S.	58.5	III	103	III
Carol A.	58.0	III	108	III
Judith E.	58.0	III	108	III
Phyllis D.	58.0	III	101	III
Janet E.	58.0	III	108	III
Kenneth P.	58.0	III	133	II
Judith R.	58.0	III	97	III
Dorothy L.	58.0	III	109	III
Carol M.	58.0	III	118	II
Thomas Mc.	58.0	III	98	III
Mary C.	58.0	III	97	III
Harold C.	58.0	III	119	II
Lynne S.	58.0	III	118	II
Peter St.	58.0	III	127	II
Carolyn E.	57.5	III	107	III
Paul C.	57.5	III	108	III
Gerald C.	57.5	III	136	II
Judith M.	57.5	III	98	III
William S.	57.5	III	92	III
Bruce C.	57.0	III	118	II
Dorothy E.	57.0	III	86	III

Pupil	Stanford Test Score	Group	Business Test Score	Group
Donald G.	57.0	III	89	III
Robert G.	57.0	III	132	II
Janet M.	57.0	III	117	II
John M.	57.0	III	106	III
Audrey S.	57.0	III	87	III
Nancy T.	57.0	III	112	II
Robert Mer.	56.5	III	50	V
Richard S.	56.5	III	95	III
Donald S.	56.5	III	93	III
John W.	56.5	III	94	III
Muriel B.	56.0	III	77	IV
Carol C.	56.0	III	80	IV
Mary Jane D.	56.0	III	107	III
Marjorie D.	56.0	III	126	II
George F.	56.0	III	51	V
Barbara G.	56.0	III	97	III
George H.	56.0	III	69	IV
Frank L.	56.0	III	72	IV
Peter M.	56.0	III	89	III
Ann M.	56.0	III	100	III
William M.	56.0	III	108	III
Todd W.	56.0	III	114	II
Harvey C.	55.5	III	90	III
William B.	55.5	III	104	III
John M.	55.5	III	108	III
Mary Lou Mor.	55.5	III	106	III
Roger R.	55.5	III	104	III
John S.	55.5	III	47	V
Annette B.	55.0	III	117	II
Peter B.	55.0	III	82	IV
Frances B.	55.0	III	88	III
Roland C.	55.0	III	79	IV
Mary Ch.	55.0	III	117	II
Shirley F.	55.0	III	117	II
Wilhelmina F.	55.0	III	79	IV
Eddie H.	55.0	III	81	IV
Sherman J.	55.0	III	115	II
John M.	55.0	III	88	III
Paul M.	55.0	III	94	III
Thomas M.	55.0	III	94	III
Joan F.	54.0	IV	95	III
Charlotte K.	54.0	IV	90	III
Rosemary M.	54.0	IV	94	III
Paul Mur.	54.0	IV	83	IV
Thomas C.	53.5	IV	94	III
Joyce H.	53.5	IV	111	II

Pupil	Stanford Test Score	Group	Business Test Score	Group
Donald G.	57.0	III	89	III
Robert G.	57.0	III	132	II
Janet M.	57.0	III	117	II
John M.	57.0	III	106	III
Audrey S.	57.0	III	87	III
Nancy T.	57.0	III	112	II
Robert Mer.	56.5	III	50	V
Richard S.	56.5	III	95	III
Donald S.	56.5	III	93	III
John W.	56.5	III	94	III
Muriel B.	56.0	III	77	IV
Carol C.	56.0	III	80	IV
Mary Jane D.	56.0	III	107	III
Marjorie D.	56.0	III	123	II
George F.	56.0	III	51	V
Barbara G.	56.0	III	97	III
George H.	56.0	III	69	IV
Frank L.	56.0	III	72	IV
Peter L.	56.0	III	89	III
Ann M.	56.0	III	100	III
William M.	56.0	III	106	III
Todd W.	56.0	III	114	II
Harvey C.	55.5	III	90	III
William B.	55.5	III	104	III
John M.	55.5	III	108	III
Mary Lou Mor.	55.5	III	106	III
Roger R.	55.5	III	104	III
John S.	55.5	III	47	V
Annette B.	55.0	III	117	II
Peter B.	55.0	III	82	IV
Frances S.	55.0	III	88	III
Roland C.	55.0	III	79	IV
Mary Ch.	55.0	III	117	II
Shirley F.	55.0	III	117	II
Wilhelmina F.	55.0	III	79	IV
Eddie H.	55.0	III	81	IV
Sherman J.	55.0	III	115	II
John M.	55.0	III	88	III
Paul M.	55.0	III	94	III
Thomas M.	55.0	III	94	III
Joan F.	54.0	IV	95	III
Charlotte K.	54.0	IV	90	III
Rosemary M.	54.0	IV	94	III
Paul Mur.	54.0	IV	83	IV
Thomas C.	53.5	IV	94	III
Joyce H.	53.5	IV	111	II

Pupil	Stanford Test Score	Group	Business Test Score	Group
Dorothy B.	53.0	IV	73	IV
Rose C.	53.0	IV	25	V
Carol C.	53.0	IV	94	III
Bobby D.	53.0	IV	93	III
Anna F.	53.0	IV	104	III
Guy G.	53.0	IV	84	IV
Beatrice H.	53.0	IV	72	IV
Adele J.	53.0	IV	69	IV
Alfred L.	53.0	IV	87	III
John Mi.	53.0	IV	80	IV
Mary Lou M.	53.0	IV	83	IV
Kathleen O.	53.0	IV	101	III
Ruth P.	53.0	IV	98	III
Dorothy S.	53.0	IV	21	V
John H.	52.5	IV	81	IV
Judith S.	52.5	IV	81	IV
Patricia W.	52.5	IV	82	IV
Edith V.	52.5	IV	59	IV
Robert A.	52.0	IV	84	IV
Peter C.	52.0	IV	73	IV
Maureen D.	52.0	IV	92	III
Dominic G.	52.0	IV	66	IV
Marilyn G.	52.0	IV	105	III
Dawn H.	52.0	IV	85	III
Carolyn O.	52.0	IV	90	III
Helen R.	52.0	IV	60	IV
Patrick T.	52.0	IV	95	III
Mary E.	51.5	IV	58	V
Gordon F.	51.5	IV	92	III
Evelyn H.	51.5	IV	102	III
Ruth M.	51.5	IV	74	IV
Arthur R.	51.5	IV	65	IV
Coralyn W.	51.5	IV	91	III
Nancy D.	51.0	IV	78	IV
Sarah F.	51.0	IV	52	V
John L. K.	51.0	IV	36	V
Elinor Mc.	51.0	IV	84	IV
Pauline C.	50.5	IV	26	V
George J.	50.5	IV	74	IV
Robert J.	50.0	IV	100	III
Charles C.	50.0	IV	77	IV
Mary C.	50.0	IV	79	IV
Marie G.	49.5	V	99	III
Paul H.	49.5	V	45	V
Priscilla S.	49.5	V	67	V
Theresa C.	49.5	V	75	IV

Pupil	Stanford Test Score	Group	Business Test Score	Group
Dorothy E.	58.0	IV	73	IV
Rose C.	58.0	IV	85	V
Carol C.	58.0	IV	91	III
Bobby D.	58.0	IV	93	III
Anna F.	58.0	IV	104	III
Guy C.	58.0	IV	84	IV
Beatrice H.	58.0	IV	78	IV
Adela J.	58.0	IV	89	IV
Alfred L.	58.0	IV	87	III
John Mi.	58.0	IV	80	IV
Mary Lou M.	58.0	IV	88	IV
Kathleen O.	58.0	IV	101	III
Ruth P.	58.0	IV	96	III
Dorothy S.	58.0	IV	81	V
John H.	58.0	IV	81	IV
Judith S.	58.0	IV	81	IV
Patricia W.	58.0	IV	82	IV
Edith V.	58.0	IV	80	IV
Robert A.	58.0	IV	84	IV
Peter C.	58.0	IV	78	IV
Maureen D.	58.0	IV	92	III
Dominic G.	58.0	IV	88	IV
Marilyn G.	58.0	IV	105	III
Dawn H.	58.0	IV	86	III
Carolyn O.	58.0	IV	90	III
Helen R.	58.0	IV	80	IV
Patrick T.	58.0	IV	95	III
Mary E.	57.5	IV	89	V
Gordon F.	57.5	IV	92	III
Evelyn H.	57.5	IV	102	III
Ruth M.	57.5	IV	74	IV
Arthur R.	57.5	IV	85	IV
Coralyn W.	57.5	IV	81	III
Nancy D.	57.0	IV	78	IV
Sarah F.	57.0	IV	82	V
John L. K.	57.0	IV	96	V
Elinor Mc.	57.0	IV	84	IV
Pauline O.	56.5	IV	78	V
George L.	56.5	IV	74	IV
Robert J.	56.0	IV	100	III
Charles C.	56.0	IV	77	IV
Mary O.	56.0	IV	78	IV
Phyllis G.	46.5	V	99	III
Paul M.	46.5	V	46	V
Priscilla S.	46.5	V	87	V
Thomas G.	45.5	V	78	IV

Pupil	Stanford Test Score	Group	Business Test Score	Group
Dudley S.	49.0	V	112	II
Helen H.	49.0	V	41	V
Richard E	49.0	V	61	IV
Mary B.	49.0	V	59	V
Rose B.	49.0	V	61	IV
Guy C.	48.5	V	61	IV
John J. K.	48.0	V	58	V
James C.	47.5	V	66	IV
Phyllis G.	46.0	V	58	V
Joanne A.	46.0	V	69	IV

Pupil	Stanford Test Score	Group	Business Test Score	Group
Dudley S.	49.0	V	112	II
Helen H.	48.0	V	41	V
Richard E	48.0	V	81	IV
Mary B.	47.0	V	89	V
Jose S.	47.0	V	63	IV
Guy C.	46.8	V	81	IV
John L. K.	47.0	V	88	V
Teresa C.	47.3	V	68	IV
Phyllis C.	46.0	V	88	V
Joanne A.	46.0	V	69	IV

CHAPTER VI

GENERAL COMMENT AND SUGGESTED MODIFICATIONS

Pupils' comments as revealed by answers to the questionnaire. Following the final achievement test pupils were given the questionnaire and asked to react frankly and honestly to the questions. The teacher emphasized that their responses would have no bearing whatever upon grades given, that the object was to secure help from the pupils in determining the value and improving the structure of the unit assignments.

One hundred thirty-three pupils indicated that they liked this type of assignment, forty-two liked it somewhat and twenty-one did not enjoy it.

Freedom of choice attracted most pupils to the unit method. Some liked being able to work ahead at "their own speed", others liked planning their work in advance, using different books, not having to submit work on a certain date. One pupil wrote, "You learn to work on your own and become somewhat independent." Another implied that the unit method gave him a feeling of "responsibility", and several pupils stated they liked nothing about it.

Typical expressions of dislike were, "Some of the assignments were too long", and "There was too much of the same thing". A few slower pupils regretted the short

period of class time for individual help. Some disliked the "big test", others admitted it was not exacting enough. "It takes a lot of will power." A few pupils felt that all books should be made available at all times.

For the most part pupils seemed to agree that the unit method was better than the daily assignment method because work could be completed at a time convenient to their schedule. "I don't have to pass something in on a certain date"; "I can do most of my work over the week end when I have more time"; "We have more time to work on it"; "Sometimes you have a lot of homework in other subjects and this way you don't have so much math at the same time"; "If I have extra time I may do this". These were typical of the answers to the fourth question.

Many pupils did not attempt to tell what disadvantages they saw in the unit method although some conceded the temptation to procrastinate in completing their work. Others mentioned the disadvantages of not having all texts available whenever they were wanted.

All but two of the thirty-three pupils who attempted optional activities agreed that they gleaned further understanding of the topic than just the required work gave them.

In answering the seventh question pupils were asked to include members of the family and friends with whom they

had worked on any part of the unit assignments. Approximately one fourth of the pupils preferred to work by themselves. Some of these pupils qualified their preferences by indicating a choice of working with their parents rather than with other pupils.

Pupil agreement that the moving pictures were helpful in their understanding of business practices was practically unanimous.

A number of pupils tried to recommend means of improving the assignments. One boy suggested a shorter time limit for the completion of problems, others thought a single text would suffice. Many pupils indicated a preference for shorter assignments and more of them. One of the better students thought that more group work, if possible, would be an improvement. Another good pupil favored progress tests on each step in every unit.

Generally, the pupils' comments were valuable. Coupled with the teacher's observations and experiences they serve as a basis for reconstructing some phases of the unit assignments.

QUESTIONNAIRE

1. Do you like this type of assignment?

2. What do you like best about it?

3. What do you dislike about it?

4. In what ways is this method better for you than daily assignments?

5. What disadvantages do you see in this method?

6. Did the optional activities you completed give you further understanding of the topic than just the required activities?

7. Do you feel you would learn more by working with other pupils or by completing all your assignment alone?

8. Were the moving pictures helpful to you in your understanding of business practices?

9. Suggest ways in which this assignment might be improved.

10. On the back of this sheet write a summary of what you have learned in your study of business practices.

QUESTIONNAIRE

1. Do you like this type of assignment?

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8. Were the moving pictures helpful to you in your understanding of business practices?

9. Suggest ways in which this assignment might be improved.

10. On the back of this sheet write a summary of what you have learned in your study of business practices.

Needed changes as evidenced by the teacher's experience. The unit assignments in business practices as described in this paper were approved by the supervisors in the school where they were taught. They were developed to conform to the course of study outlined for the seventh grade, and it is likely that these units will be used again during the next school year. Some changes, however, must be effected so pupils may receive a maximum benefit from this method.

It is apparent that thorough practice in using fractions with large denominators and further exercise in the use of case I per cent should be planned earlier in the year - as a prerequisite to the units in business practices. This need was born out especially in Unit III when these pupil weaknesses were glaringly evident.

A greater number of books are needed. These cannot be added immediately, but a few additions each year will be helpful.

The teacher has requested opaque shades for the mathematics' classroom. If they are supplied the films may be shown without the need of exchanging rooms for the purpose.

Experience has shown that at least four and possibly six progress tests should be given in each unit and the core activities arranged so that pupils may rework types of exercises causing failure and subsequently try a similar

progress test. Should difficulty persist then pupils may report for special help. By this procedure it ishoped that more time may be given to assisting pupils of lower ability and a greater part of the laboratory period assigned to sharing experiences.

In Unit I it will be necessary to construct more exercises in finding discount in order to augment the small number of this type furnished by the texts.

Unit II should have two topics, the first devoted to finding profit or loss when the selling price and overhead are given, the second applied to finding the selling price when cost and overhead are given. Finding the selling price on a percentage basis should be included here. A progress test should complete each topic and the core activities arranged to give additional practice to failing pupils. Two more progress tests should be available for these members. Problem II of the study guide need have but half the exercises originally assigned. Number five of problem II should be reworded for clarity and problem VI should follow VII.

The third unit might better be divided into three topics, the first related to finding interest and amount for years only, the second devoted to finding interest for months and introducing the cancellation method. The third should give instruction and practice in finding interest for days and include problems bearing upon all phases of this unit. Appropriate progress tests should follow each topic.

No more than twelve or fifteen exercises of any particular type need be assigned at one time in this unit, for the progress tests will determine whether or not further practice is necessary.

Summary. In determining the value of these three short units as they were developed and taught, a review of the pupils' achievements, their attitude toward the unit method and the observations of the teacher lead to the belief that the teaching-learning cycle was successful. The changes which have been suggested above, although they might not directly influence final achievement, may be expected to bring about a conservation of the teacher's time and a more readily measurable indication of pupil progress.

The writer has found the unit method in teaching arithmetic to heterogeneous groups particularly helpful in determining each pupil's interests and proficiencies. To the greatest number of pupils the method was refreshing and stimulating. The teacher is encouraged to develop units and unit assignments in other topics of the subject field.

APPENDIX

I. Copies of the Study Guides as Used by Pupils

1. Copies of the Study Guides as Used by Pupils

STUDY GUIDE

The purpose of this study guide is to help you plan your work in this unit. When you receive it look through the topic carefully. Listen attentively to instructions and ask any questions you need to about it. Take note of the following suggestions:

1. Hand in all written work on large white lined paper in ink.
2. Pass in your problems and exercises on large plain math paper.
3. As soon as you are satisfied that you have completed any definite part of the assignment as neatly and accurately as you can, pass it in to be checked.
4. Correct any mistakes noted on your paper when you get it back and keep the paper for final binding.
5. The work on the study guide is required of all students although each may choose the manner in which some of it is completed.
6. When you have completed the required work look through the activities cards to see if there are any problems you would like to work out.
7. Plan your study math periods so that you will work on problems in your Social Utilities text at that time.

The following symbols are used in the study guide -

(S. U.) Social Utilities Arithmetics - Strayer-Upton
(M. S. M.) Modern-School Mathematics - Schorling-Clark-Smith
(A. P.) Advenced Problems in Arithmetic - Gilmartin-Russell
(P. H.) Pamphlet - found in file cabinet
(H. W.) Suggested as home study

I (HW) List as many terms as you can which storekeepers use for discount such as "sale" and "mark-down." Ask your friends or parents to help you extend your list.

II Use each of the following terms in sentences showing you understand their meanings. "marked price," "discount," "rate of discount," "net price." (MSM, p. 144)

III At a sporting goods store the following items went on sale. Find the savings on each one.

ITEM	REGULAR PRICE	RATE OF DISCOUNT
A sweater	$10	20%
A football	$5.75	1/4 off
Ice Skates	$7.95	15%
A bicycle	$45	25%
A basketball	$4.65	1/3 off
Football shoes	$6.75	10%
A hockey stick	$3.85	30%
Shinguards	$4.69	18%
A rifle	$12.50	20%
A tennis racket	$8.79	12½%
A sled	$7.50	1/2 off

IV If you wish you may compute some of the savings advertized in the bulletin board display.

V You will need practice in computing discount and finding the net price. Remember to deduct the discount from the original price. (SU, p. 180, 1 to 15 and MSM, p. 145, problems 1 to 4.)

VI You will find another method of finding net price discussed in your Social Utilities text. If you wish you may use this process. Compute any twenty of the problems on page 181 and any thirty of the exercises between numbers 22 and 63 on page 182.

VII (PH) Read the story "Selling at a Bargain." Answer the following questions in complete sentences.

1. Why do merchants have sales? Give at least five reasons.
2. What other businesses besides stores offer discounts?
3. Does the gas company in our community offer discounts? Why?
4. State several ways in which "sales" may be advertized.
5. Why was George's suggestion to raise the regular selling price on all the goods and sell them at false discounts a poor one?
6. What should be a two-way purpose of business? Give a good reason for your answer.

VIII The following problems found in the Advanced Problems in Arithmetic text are easy to do, but you may try any of the others if you wish. (AP, p. 51, 1, 2; p. 52, 3, 9, 10, 13, 15, 17, 19, 20, 22, 31, 42.)

I Read about "The Profits of Mr. Burt's Pet Shop." Solve the first four problems on the next page. Pay special attention to the formula. (SU, pp. 190 and 191)

II (HW) Keep in mind that a merchant sometimes loses money in his business. We decide the profit or loss by deducting the cost and expenses from the selling price. Compute all the problems and exercises on page 192 in your Social Utilities text.

III (HW) Solve the following problems:

1. John Carver bought an old bicycle for $5.00. He wished to sell it at a profit of $3.00. He fixed it up at a cost of $.45 for paint, $4.75 for a chain, and $3.50 for a tire. What was his selling price?
2. A dealer in second hand cars bought a car for $250. Repairs cost him $46 and a new tire $32. He wanted to make a profit of $30. For how much did he sell it?
3. Mr. Adams wishes to make a profit of $150 on a boat that cost him $750. Painting and rigging the boat amounted to $125. What should the selling price be?
4. Henry Relay picked up a second hand radio for $10. He replaced a tube costing $1.75 and condensers costing $2.85. Wiring amounted to $.50 and Mr. Relay figured his time worth $1.00 an hour for $2\frac{1}{2}$ hours work. For how much should he sell the radio to make a net profit of $2.00?
5. Jack Smart took 8 pictures on a hiking trip. Other boys wanted sets. He decided to sell them at a profit of $.10 per set. If the film and the prints cost $.06 each how much did he charge for a set?

IV If you understand the meanings of cost, expenses, selling price and profit you should be able to find any one of these when all the rest are given. Choose ten of this kind to do. (SU p. 194)

V Review the explanation of computing the profits as a per cent of the cost. Now try eight problems of this type. (SU p. 195)

VI Make a chart like the one suggested in the text. You may leave out the last column if you wish. If you decide to include this last column be sure to study the problems and their solution above the chart carefully. (MSM p. 160)

VII There is another method of finding the selling price on a percentage basis. Choose this method if you wish but first read the explanation carefully. (SU p. 196, 1 to 8)

VIII You may like to review what you have learned about profit and loss in business. Read the discussion "Making and Losing Money." Set down on paper complete sentences which show that you understand the meanings of net profit, gross profit, operating expenses, selling price and loss.

Topic III

I. Bring in examples of money loans and interest which may be placed on the bulletin board.

II. (HW) Many persons borrow money. Why? For what reasons would a business man borrow money? Why does a family sometimes need borrowed money? Ask someone in your family to help you list the reasons. Write a paper on the subject.

III. You will need practice in finding the interest on sums of money at given times and stated rates of interest. Choose sixty to do. (SU p. 206, MSM p. 208, SU p. 207)

IV. Remember that the "amount" refers to the total sum paid back to the lender, that is, the principal plus the interest. Try your skill with problems asking for amounts. (MSM p. 209, (a) to (l))

V. In computing all future interest problems label each part appropriately as "int." for interest, "prin." for principal, "rt." for rate and "t." for time. Try eleven problems using these abbreviations. (SU p. 208)

VI. Further practice on this type of exercise is necessary to gain skill. See if you have improved in speed and accuracy. (MSM p. 210, 1 to 12)

VII. Choose fifty exercises which involve finding interest for a number of days. Use the cancellation method if you wish. (SU p. 209 and MSM p. 211)

VIII. Look through the first fifty problems beginning on page 71 in the Advanced Problems in Arithmetic Text. Choose any twenty of these to complete.

II. Progress Tests as Used by Pupils

EFFICIENCY BOND
PAPER CONTENT
A.P & P. CO.

PROGRESS TEST - TOPIC I

Find the answers to the following exercises and problems. Place the answers in the brackets to the right after you have checked your work carefully.

Compute the net price on the following:

	Regular Price	Rate of Discount	Net Price
1.	$250	30%	( )
2.	$75	25%	( )
3.	$.70	15%	( )
4.	$1.50	10%	( )
5.	$.50	20%	( )

6. For how much would a chair sell marked $20 and discounted 10%? ( )
7. Find the net price of a $35 coat sold at 1/3 off. ( )
8. What would you save on a tennis racket marked down 20% if it regularly sold for $3.50? ( )
9. John's bicycle cost him $42. When he no longer needed it he sold it for 1/4 less. What was the price he asked? ( )
10. If footballs are selling at a 12½% reduction, what would an $8.75 football cost you? ( )

PROGRESS TEST - TOPIC II

Find the answers to the following exercises and problems. Place the answers in the parentheses at the right after you have checked your work carefully.

1. In selling, the difference between what a merchant buys an article for and what he sells it for is the (_____ profit).
2. Deducting the overhead from the gross profit gives us the (_____ _____)

Find the profit or loss of the following and state which it is.

	SELLING PRICE	COST	EXPENSES	PROFIT OR LOSS
3.	$325	$216	$48	( )
4.	$149	$98	$56	( )
5.	$510	$432	$64	( )
6.	$275	$214	$37	( )
7.	$110	$73	$28	( )

8. A boat cost $142 and was sold for $175. Did the merchant gain or lose if the overhead was $29? How much? ( )
9. A car that sold for $872 cost $695 and had an overhead of $143. What did the dealer make or lose? ( )
10. A merchant bought goods for $489. His operating expenses were 33 1/3% of the cost of his goods. What profit did he make on sales of these goods amounting to $615? ( )

PROGRESS TEST - TOPIC III

Find the answers to the following exercises and problems. Place the answers in the parentheses at the right <u>after</u> you have checked your work carefully.

Find the interest on -

1. $1200 for 2 years at 5%. ( )
2. $4050 for 1 year at 2½%. ( )
3. $750 for 6 months at 3%. ( )
4. $1000 for 30 days at 6%. ( )
5. $8500 for 11 years at 4½%. ( )
6. $10,000 for 5 years at 3½%. ( )
7. Hugh put $120 to work by lending it to his father for 2 years at 5%. How much interest did Hugh get in the 2 years? ( )
8. Mary invested $50 at 5% interest. How much did the $50 earn for her in 6 months? ( )
9. Helen has $250 in a bank which pays 2% interest every six months. How much will her money earn for her at the end of the first 6 month period? ( )
10. Mr. Hayes offered to sell his $1200 car for $800 cash and take the remainder in 4 months at 6%. How much did he receive in all for his car? ( )

III. Final Achievement Test as Used by Pupils

BUSINESS PRACTICES

TEST

Part I

What to do: Read each statement carefully choosing the word or phrase which completes it correctly. Make a circle around the letter beside the word or phrase you choose.

Example:

A common term which refers to discount is

a. price
(b.) mark-down
c. cost
d. expense

1. When we purchase goods at a discount we usually

   a. pay the full price
   b. pay more than usual
   c. save money
   d. lose money

2. Storekeepers offer discounts to

   a. make more money
   b. attract customers
   c. compete with other storekeepers
   d. fool the public

3. A dealer in furs would probably have a sale

   a. in the fall
   b. during the winter
   c. at springtime
   d. all year round

4. Many merchants sell goods at a discount which are

   a. slightly damaged
   b. useless
   c. scarce
   d. high priced

5. An example of a business concern which frequently offers customers discounts is the

   a. ten-cent store
   b. public utility
   c. insurance company
   d. bank

6. A gas company may offer regular discounts to encourage

   a. prompt payment
   b. use of more fuel
   c. more business
   d. more customers

7. A consumer may tell a true discount from a false discount by

   a. cross examining the merchant
   b. examining the goods
   c. comparing prices at reliable stores
   d. buying elsewhere

8. The term fraction of original price refers to

   a. discount
   b. cost
   c. overhead
   d. expense

9. The usual amount of money a merchant asks for goods he sells is called the

   a. cost
   b. regular price
   c. profit
   d. loss

10. The sum of money a merchant subtracts from the marked price is the

    a. regular price
    b. rate
    c. discount
    d. per cent

11. The per cent used to decide how much shall be reduced from the regular selling price is the

    a. discount
    b. rate of discount
    c. net price
    d. selling price

12. The new price found by discount is known as the

    a. net price
    b. gross price
    c. loss
    d. profit

13. The discount is found by multiplying the marked price by

    a. the gross price
    b. net price
    c. rate of discount
    d. discount

14. When we subtract the discount from the marked price we get the

a. discount
b. net price
c. rate
d. selling price

15. A merchant sells goods

a. to get them cheaper for himself
b. to make money
c. for fun
d. to buy more goods

16. A storekeeper makes a profit if he sells merchandise

a. at cost
b. at a discount
c. for more than cost
d. at less than cost

17. If his cost is greater than his selling price he

a. makes a profit
b. takes a loss
c. breaks even
d. sells at a discount

18. The money a business man pays for his goods is called the

a. cost
b. loss
c. margin
d. profit

19. Certain operating expenses such as salaries, rent, taxes, insurance are known as

a. loss
b. bookeeping
c. margin
d. overhead

20. What a business man asks his customers to pay for goods is the

a. selling price
b. wholesale price
c. gross cost
d. net price

21. The difference between the cost and the price for which goods are sold is the

a. net profit
b. gross profit
c. profit
d. overhead

22. If the cost of goods and the operating expenses are more than the selling price, the merchant

a. makes a profit
b. breaks even
c. takes a loss
d. borrows money

23. When the selling price is more than the cost and overhead the merchant

a. makes a profit
b. sells at a discount
c. loses
d. breaks even

24. Borrowing money is very much like

a. renting property
b. buying a house
c. selling goods
d. being insured

25. What a person pays for the use of money is called

a. a fine
b. rate of interest
c. interest
d. principal

26. The amount of money a person borrows is the

a. rate
b. interest
c. principal
d. discount

27. The "rate of interest" refers to the

a. time
b. per cent of the principal
c. amount
d. bank

28. To borrow money at 6% means to pay an interest of six cents for

a. every dollar borrowed
b. every one hundred dollars
c. every thousand dollard
d. every cent borrowed

29. If the borrower uses the money for more or less than one year, he pays interest based upon what it would cost to use it for

a. 60 days
b. one month
c. one day
d. one year

30. When a person no longer needs the use of borrowed money he

a. returns the principal with interest
b. pays the interest and keeps the money
c. returns the principal without interest
d. keeps the principal and interest

31. Money should be borrowed only by persons

a. who cannot live within their incomes
b. who do not earn enough money to meet their needs
c. who can pay it back out of the money they earn
d. who are dishonest

32. A family is justified in borrowing money to

a. pay for luxuries
b. purchase necessities
c. put in the bank
d. lend to friends

33. Communities that borrow money for such purposes as building schools or constructing roads pay for the use of the money by

a. borrowing more
b. contributions
c. fines
d. taxation

34. The most commonly used rates of interest are between

a. one and seven per cent
b. ten and fifteen per cent
c. eight and twelve per cent
d. twenty and thirty per cent

35. In deciding from whom we should borrow money, we can best depend upon the reliability of

a. acquaintances
b. banks
c. gamblers
d. salesmen

36. Low interest rates are usually offered by

a. loan companies
b. friends
c. banks
d. stores

Part II

What to do: Compute the following exercises accurately using the math paper given to you for side figuring. Place your answer in the parenthesis beside the example.

Here are the regular prices of articles and the rates of discount. Find the net price of each.

37. $30, 8% ( )

38. $600, 12% ( )

39. $700, 15% ( )

40. $440, 7½% ( )

41. $564, 12½% ( )

42. $794, 33 1/3% ( )

43. $465, 16 2/3% ( )

44. $585.20, 10% ( )

45. $812.75, 40% ( )

46. $932.25, 36% ( )

In the following examples find the profit or loss. Be sure to label your answers.

	COST	EXPENSES	SELLING PRICE	PROFIT OR LOSS
47.	$123	$82	$225	( )
48.	$175	$160	$225	( )
49.	$350	$263	$665	( )
50.	$13.25	$5.00	$20.00	( )
51.	$525	$378	$875	( )
52.	$33.79	$30.75	$60.98	( )
53.	$21.49	$19.39	$44.98	( )
54.	$45.50	$32.00	$84.75	( )
55.	$25.80	$18.35	$48.75	( )
56.	$525	$378	$925	( )

Find the interest on the following sums:

	PRINCIPAL	TIME	RATE	
57.	$600	1 yr.	4%	( )
58.	$590	1 yr.	3%	( )
59.	$240	1 yr.	5%	( )
60.	$485	1 yr.	4½%	( )
61.	$985	3 yr.	4%	( )
62.	$850	4 yr.	5%	( )
63.	$767	2 yr.	5½%	( )
64.	$625	8 mo.	6%	( )
65.	$600	11 mo.	6%	( )
66.	$360	9 mo.	4%	( )
67.	$400	17 da.	5%	( )
68.	$720	42 da.	7%	( )
69.	$1250	9 mo. 22 da.	4%	( )
70.	$6850	4 mo. 15 da.	5%	( )

What to do: Work out the following problems only after you have read each one carefully. Use the math paper for figuring and place your answers in the parentheses beside the problems.

71. John Smith had saved $4.00 with which to buy a football. The one he wanted cost $4.95. The store-keeper told John that he would sell it to him at a discount of 20% if he would distribute some hand bills for him. What was the net price of the football? ( )

72. George decided to start a news stand at a bus stop. He borrowed $80 @ 6%. At the end of a year he paid back $50 of the principal with interest. What was the amount? ( )

73. George kept the remaining $30 of the principal for another year. When he paid this back how much interest had he paid for the use of the money in two years? ( )

74. George paid $10 per month as rent for the space his stand occupied. It cost him $12 a year to keep it repaired and painted. His sale of newspapers averaged 2500 per month on which he made a gross profit of one cent for each paper sold. What was his net profit each month? ( )

75. When George decided to build a Larger and better news stand he sold his old one at a discount of 33 1/3%. For how much did he sell it if he decided it cost him $97? ( )

76. A boy and his father wish to buy a sailboat for $450. They decide to borrow the money for two years at six per cent and have the use of the boat while they are saving for it. How much more did the boat cost them than if they had paid cash for it? ( )

77. A boy bought a second hand bicycle for $12. He mended the chain for 75¢, bought a new tire for $3.75, estimated it cost him $1.25 to scrape and paint it. What was his profit if he sold it for $21? ( )

78. If Mary buys a dress she likes marked $10.75 at a sale offering a 20% discount, how much money does she save? ( )

79. Mrs. Jones decided her gas bill averaged $2.85 per month. How much money would she save in a year by paying her bill promptly and receiving a 5% discount? ( )

80. On a coal bill that Mr. Paine received he noted that he could discount 3% of the total if he paid it within 10 days. If he had bought 5 tons of coal at $19 per ton, how much did he save by paying promptly? ( )

81. I received a "discount card" from a certain furniture dealer in a distant city which read, "You may enjoy an eight per cent discount on any merchandise bought in this store." How much money would I save on a chair selling for the regular price of $38.50? ( )

82. I found a nearby merchant selling the same chair at a regular price of $35. Did the card from the first merchant offer a true discount? Answer yes or no. ( )

83. Mr. Sample's store cellar was flooded by water damaging some sporting equipment worth $465 at the selling price. He was compelled to sell it all at a discount of 50%. If it cost him $210 to replace the merchandise what real loss did the damage cost him? ( )

84. A newspaper advertized a sale of boys clothing at one-third off. What would the net price on a suit be if the marked price was $14.92? ( )

85. Alice sold lemonade at the school fair. She bought 30 lemons at 3 for 5¢ and 15¢ worth of sugar. She sold 27 glassfuls of lemonade at 5¢ each. How much profit did she make? ( )

86. Two boys decided to sell Christmas cards. They bought 200 boxes at 60¢ each and sold them for a profit of 66 2/3% of the cost. What was their total profit? ( )

87. Mr. Harvey owned a small hardware store. His rent was $150 a month, he paid salaries amounting to $480, his light and telephone bills were $35, advertizing $80, taxes $75, insurance $12.50, repairs $40 and shipping charges $24.50. What was Mr. Harvey's overhead for the month? ( )

88. During the same month Mr. Harvey bought some merchandise costing $1250. What was his net profit if his sales for the month amounted to $3560? ( )

89. The students of Norwood Junior High School planned a dance to make money for their school gift fund. They were sure of selling 200 tickets. The orchestra would cost $60, refreshments $12 and janitor service $3. For how much should they sell each ticket to make a profit of $45? ( )

90. Elwood's father agreed to borrow money to pay his expenses in college if Elwood would earn money during the summer to pay the interest. How much of his summers' earnings did he pay to cover interest on $3600 for 4 years at 6% if his father paid back $900 of the principal at the end of each year? ( )

91. Mr. Hansen bought a house. He borrowed $5000 at 5½% interest and agreed to pay back 10% of the principal each year. What interest was he paying at the end of the second year? ( )

92. The town of Lakeville decided to build a school house costing $500,000. They were able to secure this money at the rate of 2½%. How much money in taxes would have to be collected to pay one year's interest on the principal? ( )

93. A merchant borrowed $15,000 at 4½%. If he paid interest every six months, what would the charge for this service be at each payment period? ( )

94. A man borrowed $1710 to buy a car. At the end of 75 days he was able to pay it back with interest at 6%. What was the amount? ( )

95. John's father was sent to a hospital after an automobile accident in which he was injured. He had no accident insurance and was obliged to pay a hospital bill of $320. He had to borrow the money and paid it back in 8 months with interest at 6%. An insurance policy would have cost him $9.00 for that period of time and paid all but $50 of his hospital bill. How much did the man lose by not having insurance? ( )

IV. Keys to Progress Tests

Progress Test - Unit I

1. $175
2. 56.25
3. .60
4. 1.35
5. .40
6. 18
7. 23.34
8. .70
9. 31.50
10. 7.66

Progress Test - Unit II

1. gross
2. net profit
3. $61 P
4. 5 L
5. 14 P
6. 24 P
7. 9 P
8. 4 P
9. 34 P
10. 37 L

Progress Test - Unit III

1. $120
2. 101.25
3. 11.25
4. 5
5. 4207.50
6. 1750
7. 12
8. 1.25
9. 2.50
10. 1208

V. Key to Final Achievement Test

Part I		Part II	
1. c	25. c	37.	$27.60
2. b	26. c	38.	528
3. c	27. b	39.	595
4. a	28. a	40.	407
5. b	29. d	41.	493.50
6. a	30. a	42.	529.34
7. c	31. c	43.	387.50
8. a	32. b	44.	526.68
9. b	33. d	45.	487.65
10. c	34. a	46.	596.64
11. b	35. b	47.	20 P
12. a	36. c	48.	110 L
13. c		49.	52 P
14. b		50.	1.75 P
15. b		51.	28 L
16. c		52.	3.56 L
17. b		53.	4.10 P
18. a		54.	7.25 P
19. d		55.	4.60 P
20. a		56.	22 P
21. b		57.	24
22. c		58.	17.70
23. a		59.	12
24. a		60.	21.83

Part II (cont.)

61. $118.20
62. 170
63. 84.37
64. 25
65. 33
66. 10.80
67. .94
68. 5.88
69. 40.56
70. 128.44

Part III

71. $3.96
72. 54.80
73. 6.60
74. 14
75. 64.67
76. 54
77. 3.25
78. 2.15
79. 1.71
80. 2.85
81. 3.08
82. No
83. 442.50
84. 9.95
85. .70
86. 80
87. 897
88. 1413
89. .60
90. 540
91. 247.50
92. 12,500
93. 337.50
94. 1731.38
95. 280.20

VI. Films for Units I and II

Bill Garman, 12 Year Old Business Man, Color, 16 mm, sound, 1 reel, 12 minutes, Division of Teaching Aids, Boston University, Order number Pr 70.

The film describes the small business of a boy interested in raising rabbits, selling their skins and buying and raising hogs. With the help of his father he earns money for his purchases, keeps a careful account, banks his money and cares for his stock. No advertising.

Sand and Flame, black and white, 16 mm, sound, 1 reel, 20 minutes. Division of Teaching Aids, Boston University.

The introductory portion of the film shows the manufacture of glass products such as bottles and pitchers. The remainder is concerned with modern manufacture of plate glass detailing processes to its final use as safety automobile glass. Operating expenses of the business are clearly suggestive throughout. No advertising.

Date Due

MAY 15 1951		NOV 25 1952	
JUL 18 1951		AUG 7	1953
JUL 25 1951		AUG 9	1954
AUG 3 1951		MAR 28 1955	
NOV 5 1951		JUL 20 1962	
NOV 8 1951		AUG 6 1962	
DEC 11 1951		FEB 18 1963	
JAN 4 1952		MAR 14 1964	
JAN 15 1952		DEC 9 '64	
FEB 5 1952		DEC 10 '64	
MAR 5 1952		JAN 20 '65	
APR 15 1952			
JUL 1 1952			
AUG 12 1952			

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